

Report Number: 208-TRC-03-002
212-TRC-03-001
301-TRC-03-001

Safety Compliance Testing for FMVSS 208
Occupant Crash Protection

General Motors Corporation

2003 Chevrolet Silverado

NHTSA Number: C30102

TRC Inc. Test Number: 021119-1

Transportation Research Center Inc.

10820 State Route 347

East Liberty, OH 43319



Report Date: Dec. 23, 2002

Final Report

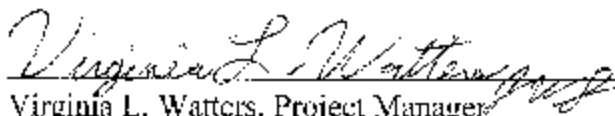
Prepared For:

U. S. Department of Transportation
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance (NVS-221)
400 Seventh Street, S.W., Room No. 6115
Washington, DC 20590

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Test Performed By: Jason D. Jenkins, Senior Project Engineer

Report Approved By:



Date 12/23/02

Virginia L. Watters, Project Manager
Transportation Research Center Inc.

Final Report Acceptance By OVSC:

Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Vehicle Safety Compliance

Date _____

| | | | |
|--|--|--|-----------|
| 1. Report No. 208-TRC-03-002 212-TRC-03-001 301-TRC-03-001 | 2. Government Accession No. | 3. Recipient's Catalog No. | |
| 4. Title and Subtitle Final Report of FMVSS 208 Compliance Testing of a 2003 Chevrolet Silverado NHTSA No. C30102 | | 5. Report Date Dec. 23, 2002 | |
| | | 6. Performing Organization Code TRC | |
| 7. Author(s) Virginia L. Walters, Project Manager Transportation Research Center Inc. | | 8. Performing Organization Report No. 021119-1 | |
| 9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319 | | 10. Work Unit No. | |
| 12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Safety Assurance Office of Vehicle Safety Compliance (NVS-220) 400 Seventh Street, S.W., Room 6115 Washington, DC 20590 | | 11. Contract or Grant No. DTNH22-02-D-08062, T.O. # VRTC-DCF2525 | |
| | | 13. Type of Report and Period Covered Final Report Nov. - Dec. 2002 | |
| | | 14. Sponsoring Agency Code NVS-220 | |
| 15. Supplemental Notes None | | | |
| 16. Abstract Compliance tests were conducted on a 2003 Chevrolet Silverado, NHTSA No. 30104, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208-11 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows: None | | | |
| 17. Key Words Compliance Testing Safety Engineering FMVSS 208 | | 18. Distribution Statement Copies of this report are available from: NHTSA Technical Information Services (TIS) NPO-230 400 Seventh Street, S.W., Room 5108 Washington, DC 20590 Telephone: 202-366-4946 | |
| 19. Security Classif. (of this report) Unclassified | 20. Security Classif. (of this page) Unclassified | 21. Number of Pages 231 | 22. Price |

Table of Contents

| <u>Section</u> | <u>Description</u> | <u>Page</u> |
|----------------|---|-------------|
| Section 1 | Purpose of Compliance Test | 1-1 |
| Section 2 | Tests Performed | 2-1 |
| Section 3 | Injury Result Summary | 3-1 |
| Section 4 | Discussion of Test (if applicable) | 4-1 |
| Section 5 | Test Data Sheets (list each sheet in order) | 5-1 |
| Section 6 | Test Data (including acceleration and load plots) | 6-1 |
| Section 7 | Photographs | 7-1 |
| Appendix A | Test Equipment List and Calibration Information | A-1 |

List of Data Sheets

| <u>Number</u> | <u>Description</u> | <u>Page</u> |
|---------------|--|-------------|
| 1 | COTR Work Order | 5-2 |
| 2 | Report of Vehicle Condition | 5-6 |
| 3 | Certification Label and Tire Placard Information | 5-8 |
| 4 | Rear Outboard Seating Position Seat Belts | 5-9 |
| 5 | Air Bag Labels | 5-10 |
| 6 | FMVSS 208 Readiness Indicator | 5-19 |
| 7 | Passenger Manual Cut-Off Device | 5-20 |
| 8 | Lap Belt Lockability | 5-23 |
| 9 | FMVSS 208 Seat Belt Warning System Check (S7.3) | 5-29 |
| 10 | Belt Contact Force (S7.4.3) | 5-31 |
| 11 | Latchplate Access (S7.4.4) | 5-37 |
| 12 | Seat Belt Retraction (S7.4.5) | 5-45 |
| 13 | Seat Belt Guides and Hardware (S7.4.6) | 5-51 |
| 26 | Vehicle Weight, Fuel Tank and Attitude Data | 5-54 |
| 27 | Vehicle Accelerometer Locations | 5-58 |
| 28 | Photographic Targets | 5-61 |
| 29 | Camera Locations | 5-67 |
| 30 | Dummy Positioning Procedures for Test Dummy Conforming to Subpart E of Part 572 | 5-69 |
| 31 | Dummy Positioning Measurements | 5-77 |
| 32 | Crash Test | 5-83 |
| 34 | Accident Investigation Measurements | 5-84 |
| 35 | Windshield Mounting (FMVSS 212) | 5-86 |
| 36 | Windshield Zone Intrusion (FMVSS 219) | 5-88 |
| 37 | Fuel System Integrity (FMVSS 301) | 5-90 |

Section 1

Purpose of Compliance Test

PURPOSE

This Federal Motor Vehicle Safety Standard 208 compliance test is part of a program conducted for the National Highway Traffic Safety Administration by Transportation research Center (TRC Inc.) under contract DTN1122-02-D-08062, Task Order VRTC-DCF2525. The purpose of the test was to determine whether the subject vehicle, a 2003 Chevrolet Silverado, NHTSA No. C30102, meets certain performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; indicant FMVSS 219, "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity". The compliance test was conducted in accordance with OVSC Laboratory Test Procedure No. TP-208-11 dated August 22, 2002.

Section 2

Tests Performed

TESTS PERFORMED

The following checked items indicate the tests that were performed.

- ☒ 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4)
- ☒ 2. Air bag labels (S4.5.1)
- ☒ 3. Readiness indicator (S4.5.2)
- ☒ 4. Passenger Air Bag Manual Cut-Off Device (S4.5.4)
- ☒ 5. Lap belt lockability (S7.1.1.5)
- ☒ 6. Seat belt warning system (S7.3)
- ☒ 7. Seat belt contact force (S7.4.3)
- ☒ 8. Seat belt latch plate access (S7.4.4)
- ☒ 9. Seat belt retraction (S7.4.5)
- ☒ 10. Seat belt guides and hardware (S7.4.6)
- ☐ 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart N)
- ☐ 12. Suppression tests with Newborn infant Subpart K dummy (Part 572, Subpart N)
- ☐ 13. Suppression tests with 3-year-old dummy (Part 572, Subpart P)
- ☐ 14. Suppression tests with 6-year-old dummy (Part 572, Subpart R)
- ☐ 15. Test of Reactivation of the passenger Air Bag system with an Unbelted 5th Percentile female dummy
- ☐ 16. Low risk deployment test with 12-month-old dummy (Part 572, Subpart N)
- ☐ 17. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P)
- ☐ 18. Low risk deployment test with 6-year-old dummy (Part 572, Subpart R)
- ☐ 19. Low risk deployment test with 5th female dummy (Part 572, Subpart O)
- ☒ 20. Impact tests
 - ☐ Frontal Oblique
 - ☐ Belted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.1(a))
 - ☐ Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
 - ☐ Unbelted 50th male dummy driver and passenger (32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))
 - ☒ Frontal 0°
 - ☐ Belted 50th male dummy driver (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - ☐ Belted 50th male dummy passenger (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - ☐ Belted 5th female dummy driver (0 to 48 km/h) (S16.1(a))
 - ☐ Belted 5th female dummy passenger (0 to 48 km/h) (S16.1(a))
 - ☐ Belted 50th male dummy driver and passenger (0 to 56 km/h) (S5.1.1(b)(2))
 - ☐ Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
 - ☒ Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - ☒ Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - ☐ Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))

- _____ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
- _____ 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
- _____ 21. Sled test: Unbelted 50th male dummy driver and passenger (S13)
- _____ 22. FMVSS 204 indicant test
- X 23. FMVSS 212 test
- X 24. FMVSS 219 indicant test
- X 25. FMVSS 301 frontal test

For the crash tests, the vehicle was instrumented with 8 accelerometers. The accelerometer data from the vehicle and dummies were sampled at 12,500 samples per second and processed as specified in SAE J211/1 MAR95 and FMVSS 208, S4.13.

The dynamic tests were recorded using high speed film and digital motion picture cameras.

The vehicle appears to meet the performance requirements to which it was tested.

Section 3

Injury Result Summary

INJURY RESULT SUMMARY FOR CRASH TESTS AND/OR LOW RISK DEPLOYMENT TESTS

NHTSA No.: C30102

Test Date: 11/19/02

VIN: 1GCEC14X13Z131545

Frontal Crash ☒ Offset Crash ☐ Low Risk Deployment ☐

Impact Angle: 0

Belted Dummies: ☐ Yes ☒ No

Speed Range: ☒ 32 to 40 km/h ☐ 0 to 48 km/h ☐ 0 to 56 km/h

Test Speed: 39.2 km/h

Driver Dummy: ☐ 5th female ☒ 50th male

Passenger Dummy: ☐ 5th female ☒ 50th male

Test weight: 2295.7 kg

50th Percentile Male Frontal Crash Test

Vehicles certified to S5.1.1(b)(1), S5.1.1(b)(2), S5.1.2(a)(2), or S5.1.2(b)

| Injury Criteria | Max. Allowable Injury Assessment Values | Driver | Passenger |
|--------------------|---|--------|-----------|
| HIC15 | 700 | 132 | 94 |
| N _{te} | 1.0 | 0.40 | 0.34 |
| N _{tr} | 1.0 | 0.35 | 0.32 |
| N _{ce} | 1.0 | 0.12 | 0.06 |
| N _{cf} | 1.0 | 0.06 | 0.11 |
| Neck tension | 4170 N | 2068 | 1495 |
| Neck compression | 4000 N | 282 | 318 |
| Chest g | 60 g | 47.3 | 41.1 |
| Chest displacement | 63 mm | 33 | 14 |
| Left femur | 10,000 N | 6433 | 6773 |
| Right femur | 10,000 N | 7643 | 6915 |

Section 4

Discussion of Test

DISCUSSION OF TEST

The engine top X-axis acceleration data channel exceeded the data channel's full scale at 61 milliseconds and did not record valid data after 61 milliseconds.

The vehicle's pre-test attitudes did not fall between the measured attitudes for the delivered and fully-loaded conditions. Deviations were 6 mm or less.

The left side (B-post view and rear pit fuel tank view) cameras ran too slowly to determine the actual film speed.

The left side (barrier to front seat back, front door, B-post, and steering wheel views) and front pit (engine view) cameras ran at less than 1000 frames per second.

TRC Inc. used the method of topping off the fuel (gasoline) for determining the fully loaded weight and then drained all the fuel and filled the fuel tank to 94% capacity with Stoddard solvent.

The test dummies were not maintained in the required temperature soak of 20.6 to 22.2 C for the full sixteen hours. See temperature data on page 6-56.

Section 5
Test Data Sheets

DATA SHEET 1
COTR Vehicle Work Order

Vehicle model year, make, and model: 2003 Chevrolet Silverado

NHTSA No.: C30102

Test Date: 11/14/02

COTR signature: Charles R. Case

Tests to be performed for this vehicle are checked below

- ☒ 1. Rear outboard seating position seat belts (S7.1.4 2(b) & (S4.2.4)
- ☒ 2. Air bag labels (S4.5.1)
- ☒ 3. Readiness indicator (S4.5.2)
- ☒ 4. Passenger air bag manual cut-off device (S4.5.4)
- ☒ 5. Lap belt lockability (S7.1.1.5)
- ☒ 6. Seat belt warning system (S7.3)
- ☒ 7. Seat belt contact force (S7.4.3)
- ☒ 8. Seat belt latch plate access (S7.4.4)
- ☒ 9. Seat belt retraction (S7.4.5)
- ☒ 10. Seat belt guides and hardware (S7.4.6)
- ☐ 11. Suppression tests with 12-month-old CRI3I dummy (Part 572, Subpart R) using the following indicated child restraints.

Section A

☐ Cosco Dream Ride 02-719 ☐ Full rearward ☐ Midposition ☐ Full forward

Section B

☐ Britax Handle with Care 191 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century Assura 4553 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century Avanta SE 41530 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century Smart Fir 4543 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Cosco Ariva 62727 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Cosco Opus 35 02603 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Evenflo Discovery Adjust Right 212 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Evenflo First Choice 204 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Evenflo On My Way Position Right V 282 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Graco Infant 8457 ☐ Full rearward ☐ Midposition ☐ Full forward

Section C

☐ Britax Roundabout 161 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century Encore 4612 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century STE 1000 4416 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Cosco Olympian 02803 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Cosco Touriva 02519 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Evenflo Medallion 254 ☐ Full rearward ☐ Midposition ☐ Full forward

- ☐ 12. Suppression tests with 3-year-old dummy (Part 572, Subpart I') using the following indicated child restraints where a child restraint is required.

Section C

☐ Britax Roundabout 161 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century Encore 4612 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century STE 1000 44 6 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Cosco Olympian 02803 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Cosco Touriva 02519 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Evenflo Medallion 254 ☐ Full rearward ☐ Midposition ☐ Full forward

Section D

☐ Britax Roadster 9004 ☐ Full rearward ☐ Midposition ☐ Full forward

☐ Century Next Step 4926 ☐ Full rearward ☐ Midposition ☐ Full forward

- ☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Midposition ☐ Full forward
- ☐ 13. Suppression tests with Representative 3 year old child using the following indicated child restraints where a child restraint is required. (Laboratory Test Procedure Appendix II, Data Sheet 16II and 17H)
 Section C
☐ Britax Roundabout 161 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Century Breco 4612 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Century STE 1000 4416 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Cosco Olympian 02803 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Cosco Touriva 02519 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Evenflo Medallion 254 ☐ Full rearward ☐ Midposition ☐ Full forward
 Section D
☐ Britax Roadster 9004 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Century Next Step 4920 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Midposition ☐ Full forward
- ☐ 14. Suppression tests with 3-year-old dummy (Part 572, Subpart P) in the following positions
☐ Sitting on seat with back against seat back (S22.2.2.1)
☐ Sitting on seat with back against reclined seat back (S22.2.2.2)
☐ Sitting on seat with back rest against seat back (S22.2.2.3)
☐ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
☐ Standing on seat, facing forward (S22.2.2.5)
☐ Kneeling on seat facing forward (S22.2.2.6)
☐ Kneeling on seat facing rearward (S22.2.2.7)
☐ Lying on seat (S22.2.2.8)
- ☐ 15. Suppression tests with representative 3-year-old child in the following positions
☐ Sitting on seat with back against seat back (S22.2.2.1)
☐ Sitting on seat with back against reclined seat back (S22.2.2.2)
☐ Sitting on seat with back rest against seat back (S22.2.2.3)
☐ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
☐ Standing on seat, facing forward (S22.2.2.5)
☐ Kneeling on seat facing forward (S22.2.2.6)
☐ Kneeling on seat facing rearward (S22.2.2.7)
☐ Lying on seat (S22.2.2.8)
- ☐ 16. Suppression tests with 6-year-old dummy (Part 572, Subpart N) using the following indicated child restraints where a child restraint is required.
 Section D
☐ Britax Roadster 9004 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Century Next Step 4920 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Midposition ☐ Full forward
- ☐ 17. Suppression tests with representative 6-year-old child using the following indicated child restraints where a child restraint is required.
 Section D
☐ Britax Roadster 9004 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Century Next Step 4920 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Midposition ☐ Full forward
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Midposition ☐ Full forward
- ☐ 18. Suppression tests with 6 year old dummy (Part 572, Subpart N) in the following positions
☐ Sitting on seat with back against seat back (S22.2.2.1)
☐ Sitting on seat with back against reclined seat back (S22.2.2.2)
☐ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
☐ Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

- ____ 19. Suppression tests with representative 6-year-old child in the following positions:
- ____ Sitting on seat with back against seat back (S22.2.2.1)
 - ____ Sitting on seat with back against reclined seat back (S22.2.2.2)
 - ____ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
 - ____ Sitting back in the seat and leaning on the right front passenger door (S24.2.3)
- ____ 20. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R) using the following indicated child restraints:
- Section B
- | | | | |
|---|--------------------|-------------------|-------------------|
| ____ Britax Handle with Care 191 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Century Assura 4553 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Century Avanta SL 41530 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Century Smart Fit 4543 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Cosco Arriva 02727 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Cosco Opus 35 02603 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Evenflo Discovery Adjust Right 212 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Evenflo First Choice 204 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Evenflo On My Way Position Right V 282 | ____ Full rearward | ____ Mid position | ____ Full forward |
| ____ Graco Infant 8457 | ____ Full rearward | ____ Midposition | ____ Full forward |
- Section C
- | | | | |
|----------------------------|--------------------|------------------|-------------------|
| ____ Britax Roundabout 161 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Century Lincore 4612 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Century STE 1000 44 6 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Cosco Olympian 02803 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Cosco Touriva 02519 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Evenflo Horizon V 425 | ____ Full rearward | ____ Midposition | ____ Full forward |
| ____ Evenflo Medallion 251 | ____ Full rearward | ____ Midposition | ____ Full forward |
- ____ 21. Test of Reactivation of the Passenger Air Bag System with an Unbelled 5th Percentile Female Dummy (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____
- ____ 22. Test of Reactivation of the Passenger Air Bag System with a representative 5th Percentile Female (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____
- ____ 23. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P) in the following positions:
- ____ Position 1
 - ____ Position 2
- ____ 24. Low risk deployment test with 6-year-old dummy (Part 572, Subpart N) in the following positions:
- ____ Position 1
 - ____ Position 2
- ____ 25. Low risk deployment test with 5th female dummy (Part 572, Subpart C) in the following positions:
- ____ Position 1
 - ____ Position 2
- X 26. Impact tests
- ____ Frontal Oblique Test Speed _____
- ____ Belted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.1(a))
 - ____ Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
 - ____ Unbelted 50th male dummy driver and passenger (32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))
- X Frontal Test Speed 40 km/h see test procedure for speed tolerance
- ____ Belted 50th male dummy driver (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - ____ Belted 50th male dummy passenger (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - ____ Belted 5th female dummy driver (0 to 48 km/h) (S16.1(a))
 - ____ Belted 5th female dummy passenger (0 to 48 km/h) (S16.1(a))
 - ____ Belted 50th male dummy driver and passenger (0 to 56 km/h) (S5.1.1(b)(2))
 - ____ Unbelted 5th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))

- ☒ Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
- ☒ Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
- ☐ Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
- ☐ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
- ☐ 40% Offset 0• Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
- Test Speed _____
- ☐ 27. Sled test: Unbelted 50th male dummy driver and passenger (S13)
- ☐ 28. FMVSS 204 indicant test
- ☒ 29. FMVSS 212 test
- ☒ 30. FMVSS 219 indicant test
- ☒ 31. FMVSS 301 frontal test

DATA SHEET 2

Page 1 of 2

REPORT OF VEHICLE CONDITION

CONTRACT NO. DTN1122-02-D-08062 Date: 11/19/02
 FROM: Transportation Research Center, Virginia L. Watters
 Lab & rep name
 TO: Charles R. Case OVSC, NSA-31
 COTR Name
 PURPOSE: () Initial Receipt () Received via Transfer (X) Present vehicle condition
 MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/pickup truck
 MANUFACTURE DATE: 08/02 NHTSA NO.: C30102 BODY COLOR: Gray
 VIN: 1GC8C14X13Z131545 GVWR 2904 GAWR (Fr) 1429 GAWR (Rr) 1672
 ODOMETER READINGS: ARRIVAL 71 miles DATE 11/14/02
 COMPLETION 71 miles DATE 11/19/02
 PURCHASE PRICE: \$ 20,271 DEALER'S NAME: Bvers Downtown Chevrolet

- A. All options listed on "window sticker" are present on the test vehicle.
X Yes ___ No
- B. Tires and wheel rims are new and the same as listed
X Yes ___ No
- C. There are no dents or other interior or exterior flaws.
 ___ Yes X No See remarks
- D. The vehicle has been properly prepared and is in running condition.
 ___ Yes X No See remarks
- E. Keyless remote is available and working.
 ___ Yes X No
- F. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.
 ___ Yes X No
- G. Proper fuel filler cap is supplied on the test vehicle.
X Yes ___ No
- H. Using permanent marker, identify vehicle with NHTSA number and FMVSS test type(s) on roof line above driver door or for school buses, place a placard with NHTSA number inside the windshield and to the exterior front and rear side of bus.
X Yes ___ No
- I. Place vehicle in storage area.
X Yes ___ No
- J. Inspect the vehicle's interior and exterior, including all windows, seats, doors, etc., to confirm that each system is complete and functional per the manufacturer's specifications. Any damage, misadjustment, or other unusual condition that could influence the test program or test results shall be recorded. Report any abnormal condition to the NHTSA COTR before beginning any test.
X Vehicle OK ___ Conditions reported below in comment section
 ___ N/A Post-Test Condition

Identify the letter above to which any of the following comments apply.

Comments: In a frontal impact the vehicle sustained significant front end and unknown structural damage.

DATA SHEET 2

Page 2 of 2

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

LIST OF FMVSS TESTS PERFORMED BY THIS LAB:

208, 212, 219 Indicalt, 301

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/pickup truck

NHTSA NO. C30102

REMARKS: None

Equipment that is no longer on the test vehicle as noted on previous page: None

Explanation for equipment removal: The owner's manual and extra keys are stored with the project file.

Test Vehicle Condition: In a frontal impact the vehicle sustained significant front end and unknown structural damage.

RECORDED BY: R. Benavides

DATE: 11/14/02

APPROVED BY: V. Walters

DATE: 12/9/02

#####

RELEASE OF TEST VEHICLE

The vehicle described above is released from TRC Inc. to be delivered to _____
(Laboratory) (Laboratory)

Date: _____ Time: _____ Odometer: _____

Lab Representative: _____
Signature Title

Carrier/Customer Representative: _____
Signature Date

DATA SHEET 3
Certification Label and Tire Placard Information

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

1. Certification Label

Manufacturer General Motors Corporation

Date of Manufacture 08/02

VIN 1GCEC14X13Z131545

Vehicle certified as: ☐ Passenger car ☐ MPV ☒ Truck ☐ Bus

Front axle GVWR 1429 kg/3150 lbs.

Rear axle GVWR 1672 kg/3686 lbs.

Total GVWR 2903 kg/6400 lbs.

2. Tire Placard

☐ N/A – Vehicle is not a passenger car and does not have a tire placard.

☒ This is not a passenger car (see the item 1 above), but all or part of this information is still contained on a vehicle label and is reported here

Vehicle Capacity Weight NA¹

Designated seating capacity front NA¹

Designated seating capacity rear NA¹

Total Designated seating capacity NA¹

Recommended cold tire inflation pressure front 240 kPa/35 psi

Recommended cold tire inflation pressure rear 240 kPa/35 psi

Recommended tire size P235/75R16

¹ Label did not contain this information

DATA SHEET 4
REAR OUTBOARD SEATING POSITION SEAT BELTS

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

Do all rear outboard seating positions have type 2 seat belts? Yes ____; No X

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 seat belt was not installed.

No rear seats.

REMARKS:

DATA SHEET 5
AIR BAG LABELS (S4.5.1)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

1. **Air Bag Maintenance Label and Owner's Manual Instructions: (S4.5.1(a))**
 - 1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?
 Yes (Go to 1.2); X No (Go to 2)
 - 1.2 Does the vehicle have a label specifying air bag maintenance or replacement?
 Yes-Pass; No-FAIL
 - 1.3 Does the label contain one of the following?
 Yes-Pass; No-FAIL
Check applicable schedule
 Schedule on label specifies month and year (Record date)
 Schedule on label specifies vehicle mileage (Record mileage)
 Schedule on label specifies interval measured from date on certification label
(Record interval)
 - 1.4 Is the label permanently affixed within the passenger compartment such that it cannot be removed without destroying or defacing the label or the survivor?
 Yes-Pass; No-FAIL
 - 1.5 Is the label lettered in English?
 Yes-Pass; No-FAIL
 - 1.6 Is the label in block capitals and numerals?
 Yes-Pass; No-FAIL
 - 1.7 Are the letters and numerals at least 3/32 inches high?
height of letters and numerals
 Yes-Pass; No-FAIL
 - 1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement? Yes-Pass; No-FAIL
2. **Does the owner's manual: (S4.5.1(f))**
 - 2.1 Include a description of the vehicle's air bag system in an easily understandable format?
 X Yes-Pass; No-FAIL
 - 2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?
 X Yes-Pass; No-FAIL
 - 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
 X Yes-Pass; No-FAIL
 - 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
 X Yes-Pass; No-FAIL
 - 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to ensure maximum safety protection for those occupants?
 X Yes-Pass; No-FAIL
 - 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?

- X Yes-Pass; No-FAIL
- 2.7 Is the vehicle certified to meet the requirements of S14.5, S15, S17, S19, S21, S23, and S25? (Obtain the answer to this question from the COTR.) (S4.5.1(f)(2))
X Yes (go to 2.7.1); No (go to 3)
- 2.7.1 Explain the proper functioning of the advanced air bag system? (S4.5.1(f)(2))
X Yes-Pass; No-FAIL
- 2.7.2 Provide a summary of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2))
X Yes-Pass; No-FAIL
- 2.7.3 Present and explain the main components of the advanced passenger air bag system? (S4.5.1(f)(2)(i))
X Yes-Pass; No-FAIL
- 2.7.4 Explain how the components function together as part of the advanced passenger air bag system? (S4.5.1(f)(2)(ii))
X Yes-Pass; No-FAIL
- 2.7.5 Contain the basic requirements for proper operation, including an explanation of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2)(iii))
X Yes-Pass; No-FAIL
- 2.7.6 Is the vehicle certified to the requirements of S19.2, S21.2 or S23.2?
X Yes, continue with 2.7.6
 No, go to 2.7.7
- 2.7.6.1 Contain a complete description of the passenger air bag suppression system installed in the vehicle, including a discussion of any suppression zone? (S4.5.1(f)(2)(iv))
X Yes-Pass; No-FAIL
- 2.7.6.2 Discuss the telltale light, specifying its location in the vehicle and explaining when the light is illuminated?
X Yes-Pass; No-FAIL
- 2.7.7 Explain the interaction of the advanced passenger air bag system with other vehicle components, such as seat belts, seats or other components? (S4.5.1(f)(2)(v))
X Yes-Pass; No-FAIL
- 2.7.8 Summarize the expected outcomes when child restraint systems, children and small teenagers or adults are both properly and improperly positioned in the passenger seat, including cautionary advice against improper placement of child restraint systems? (S4.5.1(f)(2)(vi))
X Yes-Pass; No-FAIL
- 2.7.9 Provide information on how to contact the vehicle manufacturer concerning modifications for persons with disabilities that may affect the advanced air bag system? (S4.5.1(f)(2)(vii))
X Yes-Pass; No-FAIL
3. Sun Visor Air Bag Warning Label (S4.5.1 (b))
- 3.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(b)(2))
X Yes (go to 3.1.1 and skip 3.2; No (go to 3.2, skipping 3.1.1 through 3.1.6)
- 3.1.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (b)(2))
Driver side X Yes-Pass No-FAIL
Passenger side X Yes-Pass No-FAIL
- 3.1.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in Figure 8 at each front outboard seating position? (S4.5.1(b)(2))
Driver side X Yes-Pass No-FAIL
Passenger side X Yes-Pass No-FAIL

- 3.1.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(2)(i))
 Driver side X Yes-Pass No-FAIL
 Passenger side X Yes-Pass No-FAIL.
- 3.1.4 Is the message area white with black text? (S4.5.1(b)(2)(ii))
 Driver side X Yes-Pass No-FAIL
 Passenger side X Yes-Pass No-FAIL
- 3.1.5 Is the message area at least 30 cm²? (S4.5.1(b)(2)(ii))
 Driver side: Length 12.5 cm, Width 7.8 cm
 Passenger side: Length 12.5 cm, Width 7.8 cm
 Driver actual message area 97.5 cm²
 Passenger actual message area 97.5 cm²
 Driver side X Yes-Pass No-FAIL.
 Passenger side X Yes-Pass No-FAIL
- 3.1.6 Is the pictogram black on a white background? (S4.5.1(b)(2)(iii))
 Driver side X Yes-Pass No-FAIL
 Passenger side X Yes-Pass No-FAIL
- 3.1.7 Is the pictogram at least 30 mm (1.2 in) in length? (S4.5.1(b)(2)(iii))
 Driver side: Length 31 mm
 Passenger side: Length 31 mm
 Driver side X Yes-Pass No-FAIL.
 Passenger side X Yes-Pass No-FAIL
- 3.2 Vehicles not certified to meet the requirements of S19, S21, and S23.
- 3.2.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing it? (S4.5.1 (b)(1))
 Driver side Yes-Pass No-FAIL.
 Passenger side Yes-Pass No-FAIL
- 3.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position? (S4.5.1 (b)(1))
 Driver side Yes-Pass No-FAIL.
 Passenger side Yes-Pass No-FAIL.
- 3.2.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(1)(i))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2.4 Is the message area white with black text? (S4.5.1 (b)(1)(ii))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL.
- 3.2.5 Is the message area at least 30 cm²? (S4.5.1 (b)(1)(ii))
 Driver side: Length , Width
 Passenger side: Length , Width
 Actual message area cm²
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(m))
 Driver side Yes-Pass No-FAIL.
 Passenger side Yes-Pass No-FAIL.

- 3.2.7 Is the pictogram at least 30 mm in diameter? (S4.5.1 (b)(2)(iii))
 Actual diameter _____ mm
 Driver side _____ Yes-Pass _____ **No-FAIL**
 Passenger side _____ Yes-Pass _____ **No-FAIL**
- 3.3 Is the same side of the sun visor that contains the air bag warning label free of other information with the exception of the air bag maintenance label and/or the rollover-warning label? (S4.5.1 (b)(3))
 Driver side X Yes-Pass _____ **No-FAIL**
 Passenger side X Yes-Pass _____ **No-FAIL**
- 3.4 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label and/or the rollover-warning label? (S4.5.1 (b)(3))
 Driver side X Yes-Pass _____ **No-FAIL**
 Passenger side X Yes-Pass _____ **No-FAIL**
- 3.5 Does the driver side visor contain a rollover-warning label on the same side of the visor as the air bag warning label?
 _____ Yes (go to 3.5.1); X No (go to 4.1, skipping 3.5.1 through 3.5.)
- 3.5.1 Are both the rollover-warning label and the air bag warning label surrounded by a continuous solid-lined border?
 _____ Yes (go to 3.5.2 and skip 3.5.3); _____ No (go to 3.5.3 and skip 3.5.2.)
- 3.5.2 Is the shortest distance from the border of the rollover label to the border of the air bag warning label at least 1 cm? (575.105 (d)(1)(iv)(B))
 _____ actual distance
 _____ Yes-Pass; _____ **No-FAIL**
- 3.5.3 Is the shortest distance from any of the lettering or graphics on the rollover-warning label to any of the lettering or graphics of the air bag warning label at least 3 cm? (575.105 (d)(1)(iv)(A)) _____ actual distance
 _____ Yes-Pass; _____ **No-FAIL**
4. Air Bag Alert Label (A "Rollover Warning Label" or "Rollover Alert Label" may be on the same side of the driver's sun visor as the "Air Bag Alert Label." 575.105(d))
- 4.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?
 Driver side X Yes _____ No _____ If yes, for driver and passenger go to 5.
 Passenger side _____ No air bag X Yes _____ No
- 4.2 Is the air bag alert label permanently affixed (including permanent marking on the visor material or molding into the visor material) to the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (c))
 Driver side _____ Yes-Pass _____ **No-FAIL**
 Passenger side _____ Yes-Pass _____ **No-FAIL**
- 4.3 Is the air bag alert label visible when the visor is in the stowed position? (S4.5.1(c))
 Driver side _____ Yes-Pass _____ **No-FAIL**
 Passenger side _____ Yes-Pass _____ **No-FAIL**
- 4.4 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c))
 Driver side _____ Yes-Pass _____ **No-FAIL**
 Passenger side _____ Yes-Pass _____ **No-FAIL**
- 4.5 Is the message area black with yellow text? (S4.5.1(c)(1))
 Driver side _____ Yes-Pass _____ **No-FAIL**
 Passenger side _____ Yes-Pass _____ **No-FAIL**

- 4.6 Is the message area at least 20 cm²? (S4.5.1(c)(1))
 Driver side: Length _____ Width _____
 Passenger side: Length _____ Width _____
 Actual message area _____ cm²
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 4.7 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 4.8 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2))
 Driver side: diameter _____ mm
 Passenger side: diameter _____ mm
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
5. Label On the Dashboard
- 5.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(e)(2))
☒ Yes (go to 5.1.1 and skip 5.2 through 5.2.5)
 No (go to 5.2, skipping 5.1.1 through 5.1.6)
- 5.1.1 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(2))
☒ Yes-Pass; ☐ No-FAIL
- 5.1.2 Is the label clearly visible from all front seating positions? (S4.5.1(e)(2))
☒ Yes-Pass; ☐ No-FAIL
- 5.1.3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children" (S4.5.1(e)(2)(iii))) to the label shown in Figure 9? (S4.5.1(e)(2))
☒ Yes-Pass; ☐ No-FAIL
- 5.1.4 Is the heading area yellow with black text? (S4.5.1(e)(2)(i))
☒ Yes-Pass; ☐ No-FAIL
- 5.1.5 Is the message white with black text? (S4.5.1(e)(2)(ii))
☒ Yes-Pass; ☐ No-FAIL
- 5.1.6 Is the message area at least 30 cm²? (S4.5.1(e)(2)(ii))
 Length 105 mm, Width 49 mm
 Actual message area 51.5 cm²
☒ Yes-Pass; ☐ No-FAIL
- 5.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(1))
☐ Yes-Pass; ☐ No-FAIL
- 5.2.1 Is the label clearly visible from all front seating positions? (S4.5.1(e)(1))
☐ Yes-Pass; ☐ No-FAIL
- 5.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." to the label shown in Figure 7? (S4.5.1(e)(1)(iii))
☐ Yes-Pass; ☐ No-FAIL
- 5.2.3 Is the heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1(e)(1)(i))
☐ Yes-Pass; ☐ No-FAIL
- 5.2.4 Is the message white with black text? (S4.5.1(e)(1)(ii))
☐ Yes-Pass; ☐ No-FAIL
- 5.2.5 Is the message area at least 30 cm²? (S4.5.1(e)(1)(ii))
 Length _____, Width _____
 Actual message area _____ cm²
☐ Yes-Pass; ☐ No-FAIL

Label Outline, Vertical and Horizontal Line Black

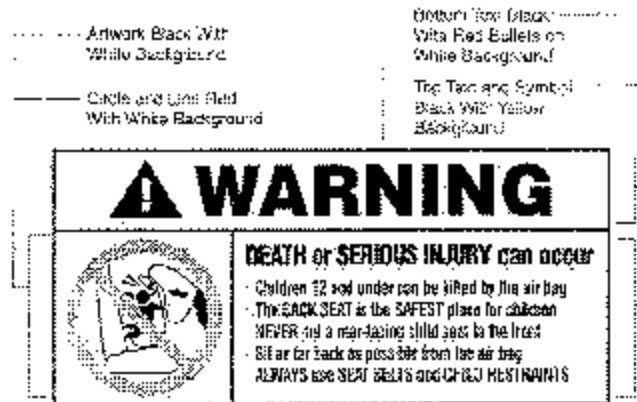


Figure 6a. Sun Visor Label Visible When Visor is in Down Position.

Label Outline, Vertical and Horizontal Line Black

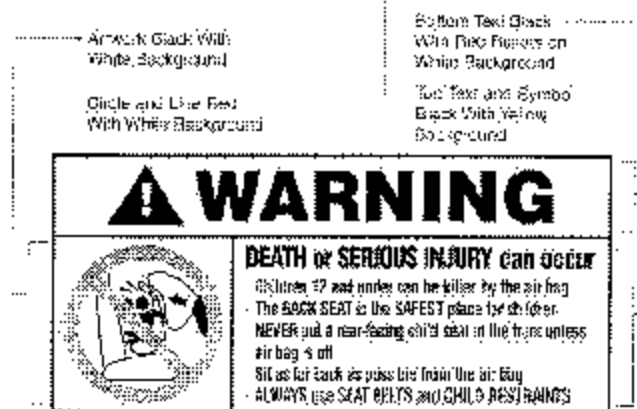


Figure 6b. Sun Visor Label Visible When Visor is in Down Position.

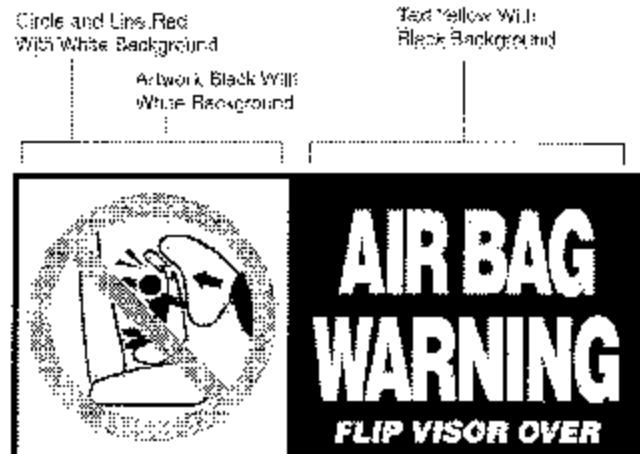


Figure 6c. Sun Visor Label Visible When Visor is in Up Position.

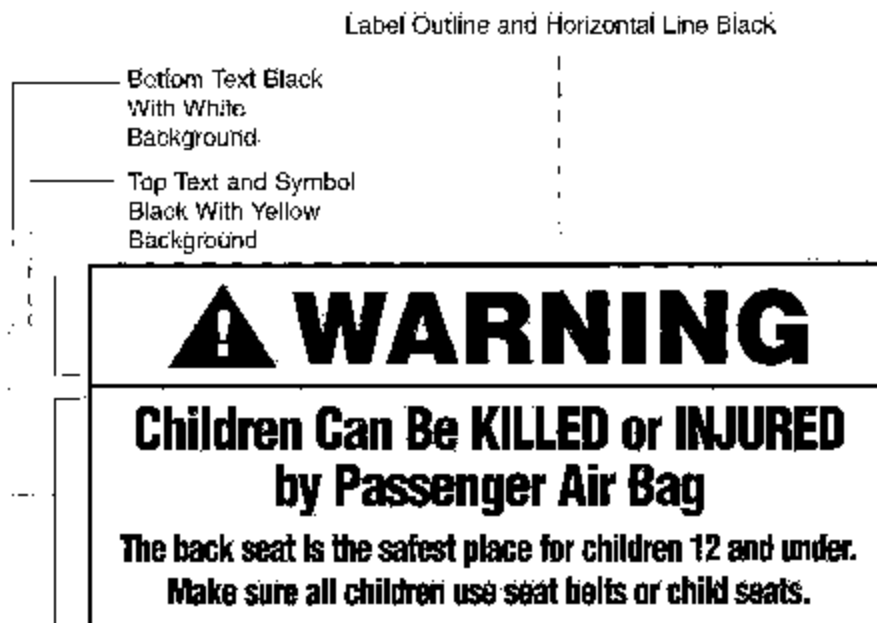


Figure 7. Removable Label on Dash.

Label Outline, Vertical and Horizontal Lines Black

Bottom Text and Artwork Black with
White Background

Top Text Black with
Yellow Background

! WARNING

EVEN WITH ADVANCED AIR BAGS



- Children can be killed or seriously injured by the air bag
- The back seat is the safest place for children
- Always use seat belts and child restraints
- See owner's manual for more information about air bags.

Figure 8. Sun Visor Label Visible when Visor
is in Down Position.

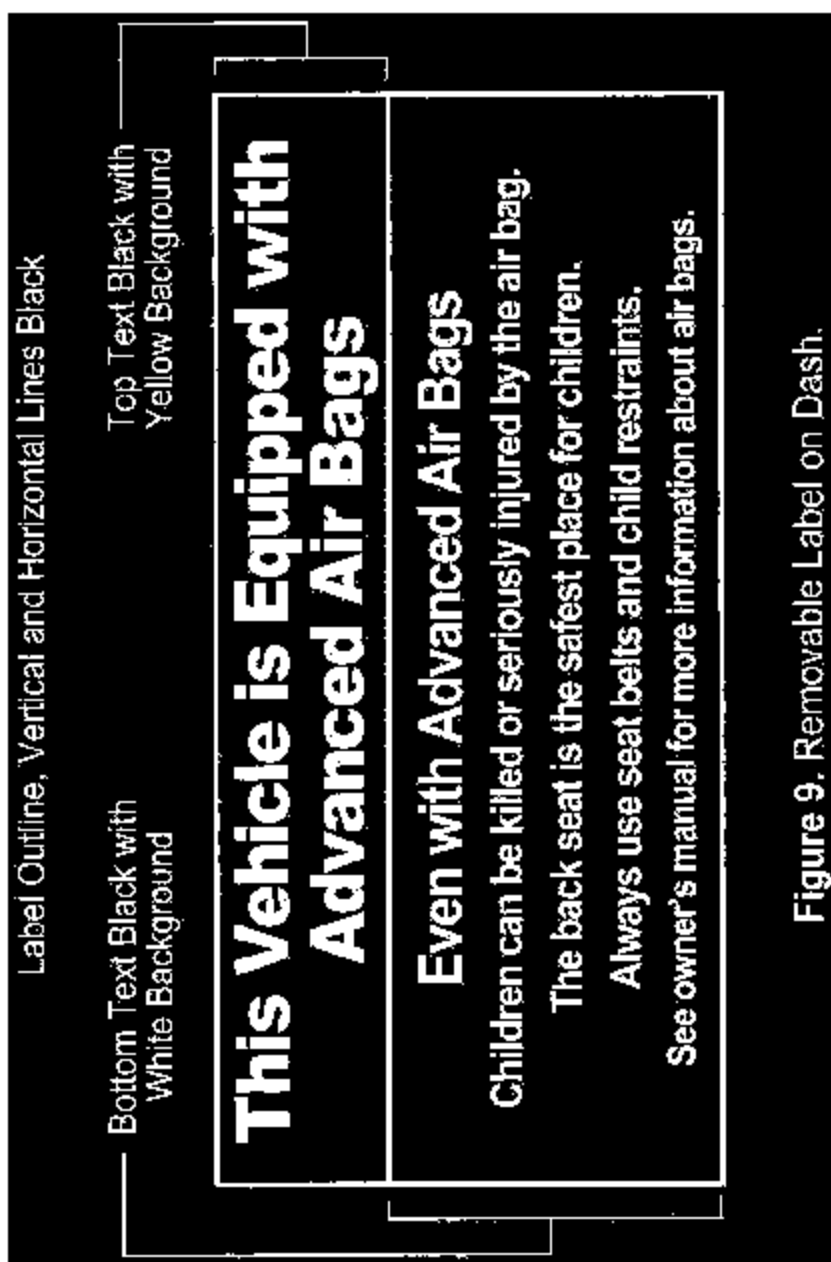


Figure 9. Removable Label on Dash.

DATA SHEET 6
FMVSS 208 READINESS INDICATOR (S4.5.2)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement. (11/8/94 legal interpretation to Lawrence H. Henneberger on behalf of Breed)

X 1. Is the system totally mechanical? Yes ; No X
(If YES this Data Sheet is complete.)

X 2. Describe the location of the readiness indicator: Left side of instrument cluster

X 3. Is the readiness indicator clearly visible to the driver?

X Yes-Pass; No-FAIL

X 4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided on a label or in the owner's manual?

X Yes-Pass; No-FAIL

X 5. Does the vehicle have an on-off switch for the passenger air bag?

X Yes (go to 6) No (this form is complete)

X 6. Is the air bag readiness indicator off when the passenger air bag switch is in the off position?

X Yes-Pass; No-FAIL

REMARKS:

DATA SHEET 7
Passenger Air Bag Manual Cut-Off Device (S4.5.4)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

- ☒ 1. Is the vehicle equipped with an on-off switch that deactivates the air bag installed at the right front outboard seating position?
☒ Yes, go to 2
☐ No, this sheet is complete
- ☐ 2. Does the vehicle have any forward-facing rear designated seating positions? (S4.5.4(a))
☐ Yes, go to 3
☒ No, go to 4
- ☐ 3. Verification of the lack of room for a child restraint in the rear seat behind the driver's seat. (S4.5.4(b))
- ☐ 3.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☐ N/A - No lumbar adjustment
- ☐ 3.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☐ N/A - No additional support adjustment
- ☐ 3.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☐ N/A - No independent fore-aft seat cushion adjustment
- ☐ 3.4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☐ N/A - No independent seat cushion height adjustment.
- ☐ 3.5. Put the seat in its full rearward position. (S16.2.10.3.1)
☐ N/A - the seat does not have a fore-aft adjustment
- ☐ 3.6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☐ N/A - No seat height adjustment
- ☐ 3.7 Draw a horizontal reference line on the side of the seat cushion.
- ☐ 3.8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☐ N/A - The seat does not have a fore-aft adjustment.
- ☐ 3.9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position. (S8.1.2)
☐ N/A - The seat does not have fore-aft adjustment.
☐ Mid position
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- ☐ 3.10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
☐ N/A - No adjustments

- Angle of reference line as tested _____
- ___ 3.11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ___ N/A – No seat back angle adjustment
 Manufacturer's design seat back angle _____
 Tested seat back angle _____
- ___ 3.12. Is the driver seat a bucket seat?
 ___ Yes, go to 3.12.1 and skip 3.12.2.
 ___ No, go to 3.12.2 and skip 3.12.1.
- ___ 3.12.1 Bucket seats:
 ___ 3.12.1.1 Locate and mark a vertical Plane B through the longitudinal centerline of the seat driver's seat cushion. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. _____
 Record the distance from the edge of the seat to Plane B. _____
- ___ 3.12.1.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion behind the driver's seat. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the driver's seat
 _____ mm distance
 ___ less than 720 mm – Pass
 ___ more than 720 mm – FAIL
 Go to 4
- ___ 3.12.2 Bench seats (including split bench seats):
 ___ 3.12.2.1 Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ 3.12.2.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the front seat.
 _____ mm distance
 ___ less than 720 mm – Pass
 ___ more than 720 mm – FAIL.
 Go to 4
- X 4. Does the device turn the air bag on and off using the vehicle's ignition key? (S4.5.4.2)
X Yes-Pass; ___ No-FAIL
- X 5. Is the on-off device separate from the ignition switch? (S4.5.4.2)
X Yes-Pass; ___ No-FAIL
- ___ 6. Is there a telltale light that comes on when the passenger air bag is turned off? (S4.5.4.2)
 ___ Yes-Pass; ___ No-FAIL This check was not performed
- ___ 7. Telltale light (S4.5.4.3) This check was not performed
- ___ 7.1 Is the light yellow? S4.5.4.3(a)
 ___ Yes-Pass; ___ No-FAIL
- ___ 7.2 Are the words "PASSENGER AIR BAG OFF" (S4.5.4.3(b))
 ___ 7.2.1 on the telltale?
 ___ Yes – Pass, go to 7.3
 ___ No – go to 7.2.2
- ___ 7.2.2 within 25 mm of the telltale? _____ mm from the edge of the telltale light
 ___ Yes-Pass; ___ No-FAIL.

- ☐ 7.3 Does the telltale remain illuminated while the air bag is turned off? (S4.5.4.3c)) (Leave the air bag off for 5 minutes.)
☐ Yes-Pass; ☐ No-FAIL
- ☐ 7.4 Is the telltale illuminated while the air bag is turned on? (S4.5.4.3(d))
☐ Yes-Pass; ☐ No-FAIL
- ☐ 7.5 Is the telltale combined with the air bag readiness indicator? (S4.5.3(e))
☐ Yes-Pass; ☐ No-FAIL
- ☒ 8. Owner's manual
- ☒ 8.1 Does the owner's manual contain complete instructions on the operation of the on-off switch? (S4.5.4.4(a))
☒ Yes-Pass; ☐ No-FAIL
- ☒ 8.2 Does the owner's manual contain a statement that the on-off switch should only be used when a member of one of the following risk groups is occupying the right front passenger seating position? (S4.5.4.4(b))
- Infants: there is no back seat
 the rear seat is too small to accommodate a child restraint
 there is a medical condition that must be monitored constantly
- Children aged 1 to 12: there is no back seat
 space is not always available in the rear seat
 there is a medical condition that must be monitored constantly
- Medical condition: medical risk causes special risk for passenger
 greater risk for harm than with the air bag on
- ☒ Yes-Pass; ☐ No-FAIL
- ☒ 8.3 Does the owner's manual contain a warning about the safety consequences of using the on-off switch at other times?
☒ Yes-Pass; ☐ No-FAIL

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center Not Type 2

X N/A No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY

1. Record test fore-aft seat position. _____ (S7.1.1.5 (c)(1))
(Any position is acceptable.)
2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL
3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL
4. Buckle the seat belt. (S7.1.1.5(c)(1))
5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
 Yes; No (If yes, go to 7.1. If no, go to 8.)
- 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
 Yes-Pass; No-FAIL
8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B _____ inches
10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- ___ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle _____ (spec. 5 - 15 degrees)
- ___ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B _____ inches
- ___ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate _____ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B _____ inches (S7.1.1.5(c)(6))
- ___ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= _____ inches,
___ Yes-Pass; ___ No-FAIL.
- ___ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= _____ inches;
___ Yes-Pass; ___ No-FAIL

REMARKS:

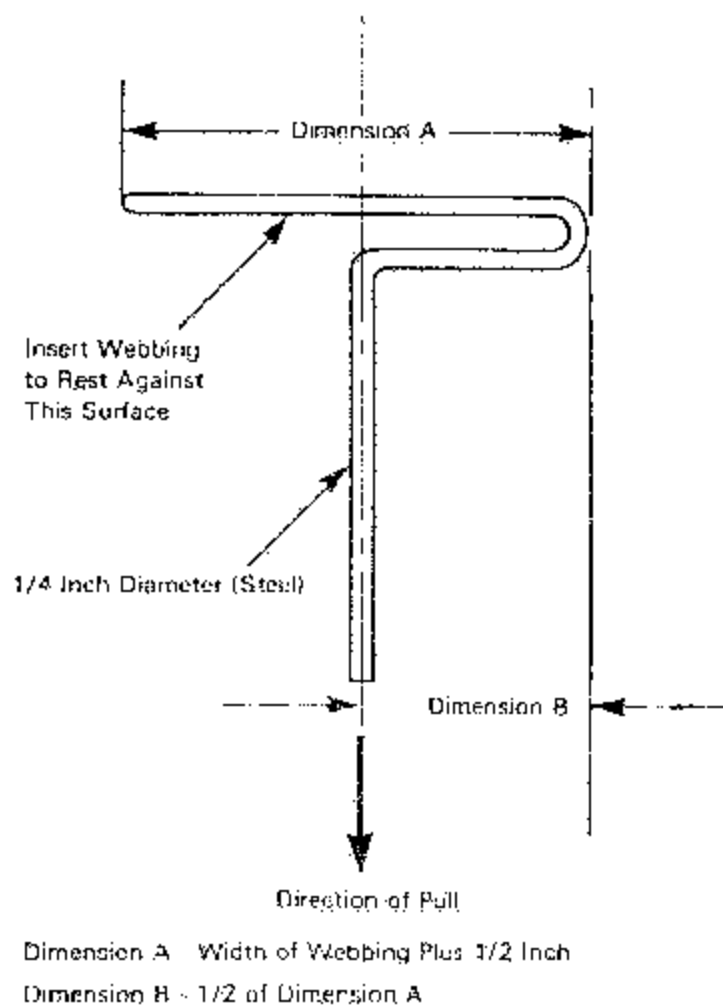


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

 N/A No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY

X 1. Record test fore-aft seat position. 23 marks (S7.1.1.5 (c)(1))
(Any position is acceptable.)

X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))

X Yes-Pass; No-FAIL

X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))

X Yes-Pass; No-FAIL

X 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

X Yes; No (If yes, go to 7.1. If no, go to 8.)

X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))

X Yes-Pass; No-FAIL

X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

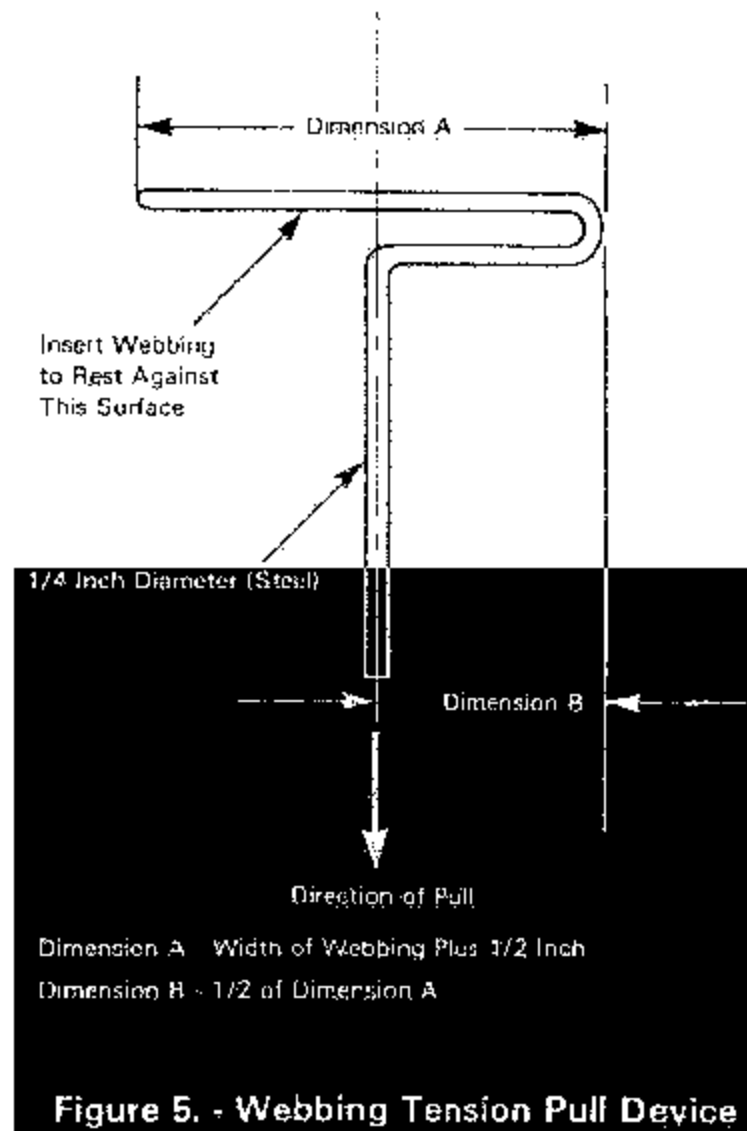
X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

Measured distance between A and B 53.8 inches

X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 30.4 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 31.0 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.6 inches,
X Yes-Pass; No-FAIL.
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 22.8 inches;
X Yes-Pass; No-FAIL

REMARKS:



DATA SHEET 9
FMVSS 208 SEAT BELT WARNING SYSTEM CHECK (S7.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

- X 1. The occupant is in the driver's seat.
X 2. The seat belt is in the stowed position.
X 3. The key is in the "on" or "start" position.
X 4. The time duration of the audible signal beginning with key "on" or "start" is 6 seconds.
X 5. The occupant is in the driver's seat.
X 6. The seat belt is in the stowed position.
X 7. The key is in the "on" or "start" position.
X 8. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.
X 9. The occupant is in the driver's seat.
X 10. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
X 11. The key is in the "on" or "start" position.
X 12. The time duration of the audible signal beginning with key "on" or "start" is 0 seconds
X 13. The occupant is in the driver's seat.
X 14. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
X 15. The key is in the "on" or "start" position.
X 16. The time duration of the warning light beginning with key "on" or "start" is 7 seconds
X 17. Complete the following table with the data from 4, 8, 12 and 16 to determine which option is used

| | | Warning light | Warning light specification | Audible signal | Audible signal specification* |
|-------------|--------------------------------|------------------|-----------------------------|------------------|-------------------------------|
| S7.3 (a)(1) | Belt latched & Key on or start | Item 16 _____ | 0 seconds* | Item 12 _____ | 0 seconds** |
| | Belt stowed & Key on or start | Item 8 _____ | 60 seconds minimum | Item 4 _____ | 4 to 8 seconds |
| S7.3 (a)(2) | Belt latched & Key on or start | Item 16 <u>7</u> | 4 to 8 seconds | Item 12 <u>0</u> | 0 seconds** |
| | Belt stowed & Key on or start | Item 8 <u>7</u> | 4 to 8 seconds | Item 4 <u>6</u> | 4 to 8 seconds |

* 49 USCS @ 30124 does NOT allow an audible signal to operate for more than 8 seconds

** 0 seconds means the light or audible signal are NOT permitted to operate under these conditions
 See 7/12/00 interpretation to Patrick Raher of Hogan and Hartson

- ☒ 18. The seat belt warning system meets the requirements of (manufacturers may comply with either section)
- ☐ S7.3 (a)(1)
 - ☒ S7.3 (a)(2)
 - ☐ **FAIL** - Does NOT meet the requirements of either option
- ☒ 19. Note wording of visual warning. (S7.3(a)(1) and S7.3(a)(2))
- ☐ Fasten Seat Belts
 - ☐ Fasten Belts
 - ☒ Symbol 101
 - ☐ **FAIL** Does not use any of the above wording or symbol

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Left

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
 ___ Yes (this form is complete)
 X No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.5)
 X N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 X N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 X N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 X N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
 ___ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 X N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ___ N/A - The seat does not have a fore-aft adjustment
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 X Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 X N/A - No adjustments
 Reference line angle as tested 0°

- ☒ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- ☐ N/A No adjustments
- Manufacturer's design seat back angle 15.5°
- Tested seat back angle 15.5°
- ☒ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 14. Fasten the seat belt latch.
- ☒ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force 0.60 lb.
- ☒ 0.0 to 0.7 pounds - Pass
- ☐ greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
 ___ Yes (this form is complete)
 X No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.5)
 X N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 X N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 X N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 X N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
 ___ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 X N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ___ N/A - The seat does not have a fore-aft adjustment
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 X Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 X N/A - No adjustments
 Reference line angle as tested 0°

- ☒ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- ☐ N/A No adjustments
- Manufacturer's design seat back angle 15.5°
- Tested seat back angle 15.5°
- ☒ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 14. Fasten the seat belt latch.
- ☒ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force 0.56 lb.
- ☒ 0.0 to 0.7 pounds - Pass
- ☐ greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center – Not Type 2

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?
☐ Yes (this form is complete)
☐ No (continue with this check sheet)
- ☐ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.5)
☐ N/A – No lumbar adjustment
- ☐ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☐ N/A – No additional support adjustment
- ☐ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☐ N/A – No independent fore-aft seat cushion adjustment
- ☐ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☐ N/A – No independent seat cushion height adjustment.
- ☐ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
☐ N/A – the seat does not have a fore-aft adjustment
- ☐ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☐ N/A – No seat height adjustment
- ☐ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☐ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☐ N/A – The seat does not have a fore-aft adjustment
- ☐ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
☐ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- ☐ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
☐ N/A – No adjustments
Reference line angle as tested _____

- ___ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- ___ N/A No adjustments
- Manufacturer's design seat back angle _____
- Tested seat back angle _____
- ___ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ___ 14. Fasten the seat belt latch.
- ___ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ___ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force _____ lb
- ___ 0.0 to 0.7 pounds - Pass
- ___ greater than 0.7 pounds - FAIL

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
X N/A - No lumbar adjustment
- X 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment.
- X 5. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
- X 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 7. Draw a horizontal reference line on the side of the seat cushion
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward
 N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- X 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal
X N/A - No adjustments
Reference line angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ___ N/A No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- ☒ 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
- ☒ 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- ☒ 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- ☒ 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- ☒ 16. Place the latch plate in the stowed position.
- ☒ 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 ☒ Yes-Pass, ___ No
- ☒ 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 ☒ Yes-Pass; ___ No
- ☒ 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?
 ☒ Yes-Pass; ___ No-FAIL
- ☒ 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
 ☒ Yes-Pass, ___ No-FAIL

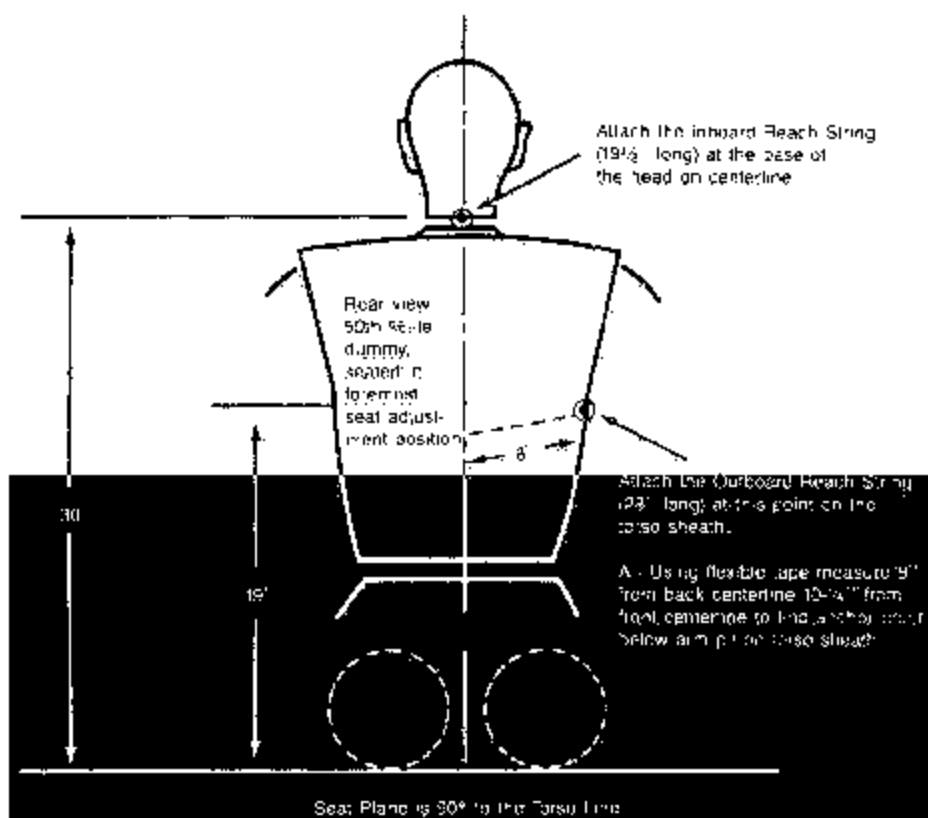


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device

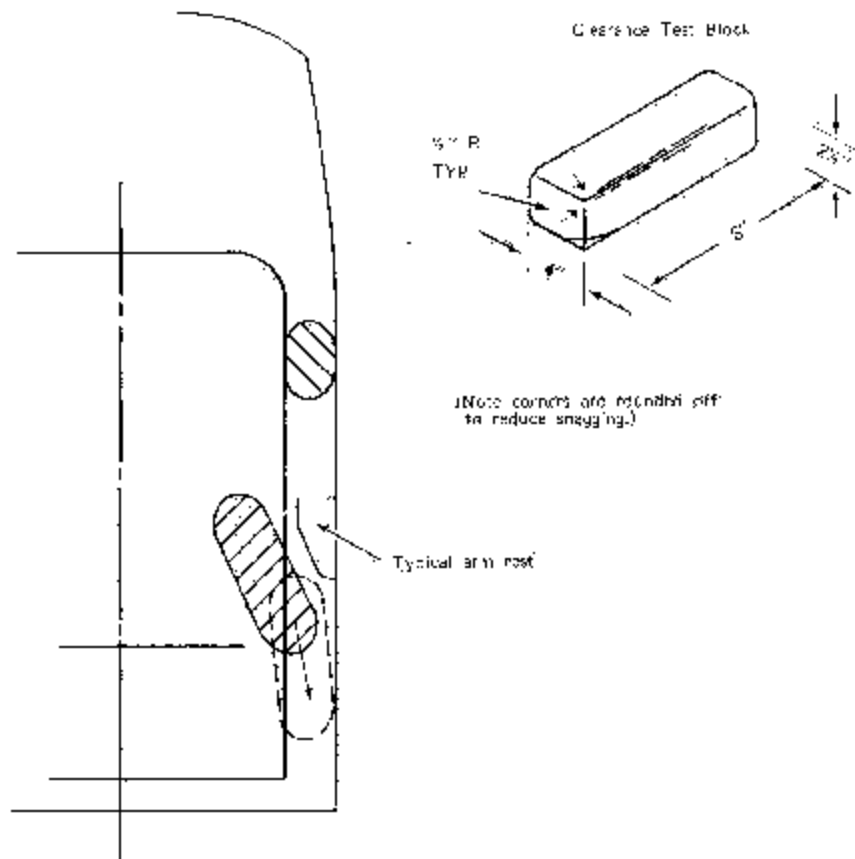


Figure 4. USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavidesw

DESIGNATED SEATING POSITION: Right Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
X N/A - No lumbar adjustment
- X 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment.
- X 5. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
- X 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 7. Draw a horizontal reference line on the side of the seat cushion
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward
 N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- X 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal
X N/A - No adjustments
Reference line angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
____ N/A No seat back angle adjustment
Manufacturer's design seat back angle 15.5°
Tested seat back angle 15.5°
- ☒ 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
- ☒ 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- ☒ 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- ☒ 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- ☒ 16. Place the latch plate in the stowed position.
- ☒ 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
☒ Yes-Pass, ____ No
- ☒ 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
☒ Yes-Pass; ____ No
- ☒ 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?
☒ Yes-Pass; ____ No-FAIL
- ☒ 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
☒ Yes-Pass, ____ No-FAIL

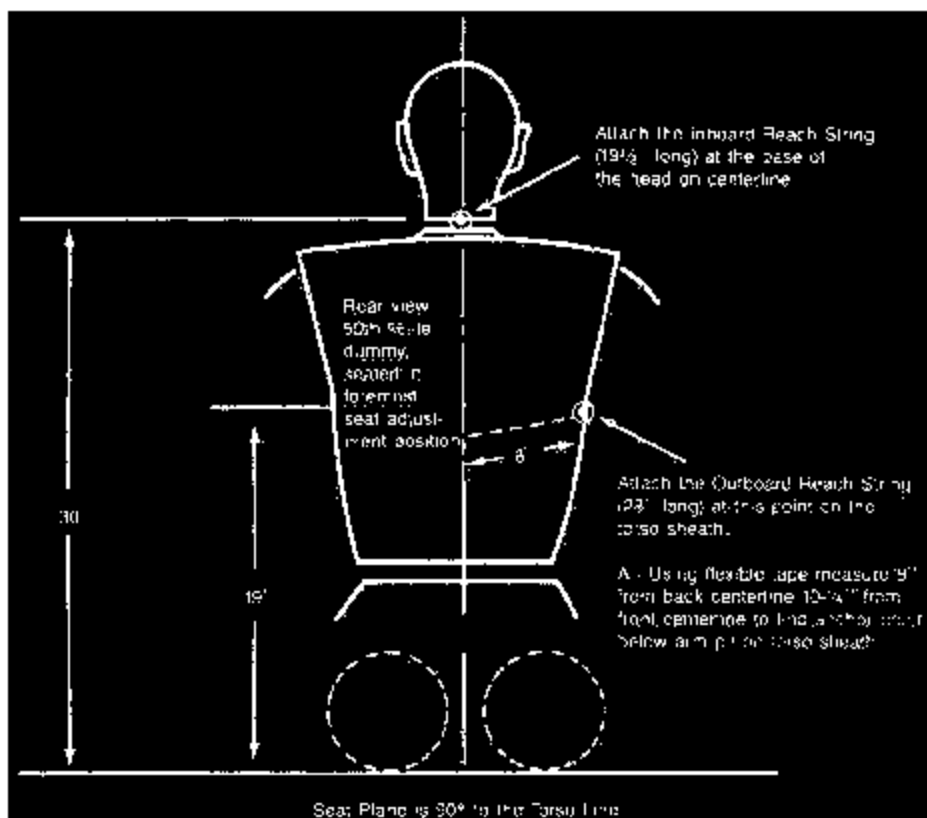
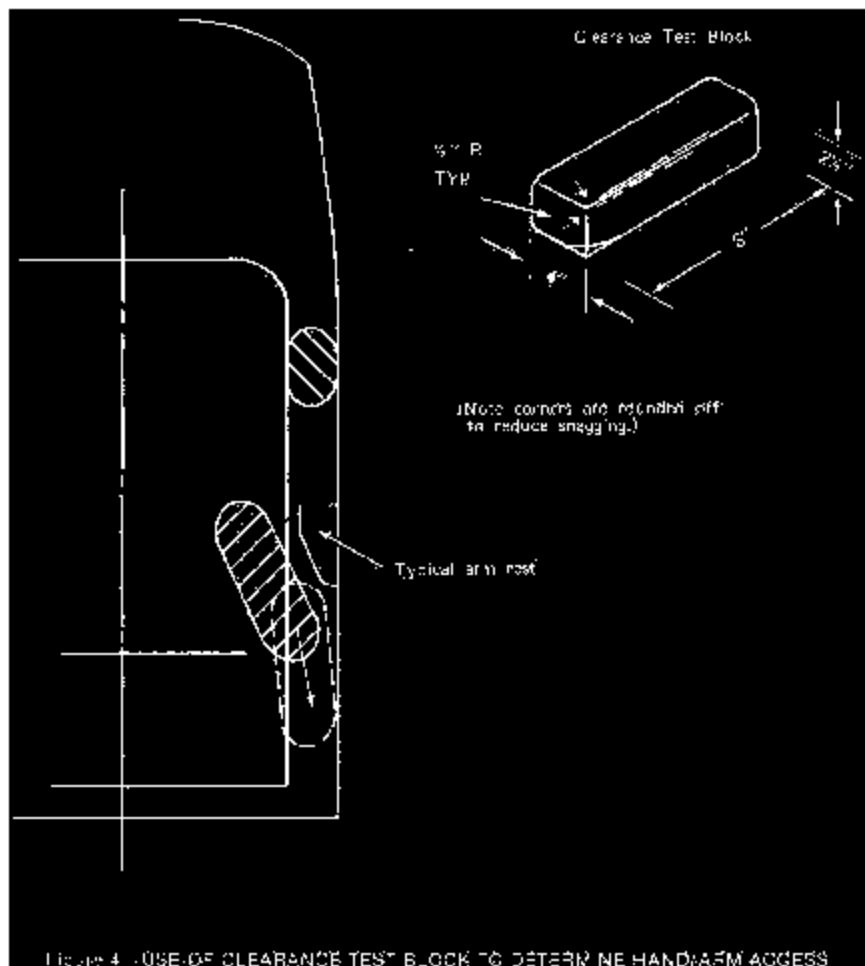


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device



DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

GVWR: 2903 kg/6400 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the vehicle a passenger car or walk-in van-type vehicle?
 ___ Yes, this form is complete
 ☒ No
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 ☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 ☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position.
 ___ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
 ☒ N/A - No seat height adjustment
- ☒ 7 Draw a horizontal line on the side of the seat cushion.
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ___ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
 If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
- ☒ 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
 ☒ N/A - No seat adjustments
 Reference angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)
 ___ N/A No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- ☒ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 ___ N/A - No head restraint adjustment
- ☒ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.5)
 ___ N/A No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position _____
 Tested anchorage position _____
- ☒ 14. Is the driver seat a bucket seat?
 ☒ Yes, go to 14.1 and skip 14.2.
 ___ No, go to 14.2 and skip 14.1.
- ☒ 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 565 mm
 Record the distance from the edge of the seat to Plane B. 267 mm
- ___ 14.2 Bench seats (including split bench seats):
 ___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
- ☒ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- ☒ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- ☒ 17. Rest the thighs on the seat cushion.
- ☒ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2) Measurement not recorded
 ___ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded
 ___ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ___ pelvic angle (20° to 25°) (S10.4.2.2) Measurement not recorded
- ☒ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 ☒ measured distance (10.6 inches) (S10.5)

- ☒ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- ☒ 21. Fasten the seat belt around the dummy.
- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☐ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
☒ 3 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?
☐ Yes, continue
☒ No, go to 26
- ☐ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual (S10.9)
- ☒ 26. Check the statement that applies to this test vehicle:
- ☐ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ☐ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- ☐ 26.3 Neither A or B apply ☐ FAIL
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
☒ Yes-Pass; ☐ No-FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
☒ N/A
☐ Yes-Pass; ☐ No-FAIL

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

GVWR: 2903 kg/6400 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Is the vehicle a passenger car or walk-in van-type vehicle?
 ___ Yes, this form is complete
 X No
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 X N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position.
 ___ N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
 X N/A - No seat height adjustment
- X 7 Draw a horizontal line on the side of the seat cushion.
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ___ N/A - The seat does not have a fore-aft adjustment
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
 If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
- X 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
 X N/A - No seat adjustments
 Reference angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)
 ___ N/A No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- ☒ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 ___ N/A - No head restraint adjustment
- ☒ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.5)
 ☒ N/A No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position _____
 Tested anchorage position _____
- ☒ 14. Is the driver seat a bucket seat?
 ☒ Yes, go to 14.1 and skip 14.2.
 ___ No, go to 14.2 and skip 14.1.
- ☒ 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 559 mm
 Record the distance from the edge of the seat to Plane B. 274 mm
- ___ 14.2 Bench seats (including split bench seats):
 ___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
- ☒ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- ☒ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- ☒ 17. Rest the thighs on the seat cushion.
- ☒ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2) Measurement not recorded
 ☒ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded
 ☒ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ☒ pelvic angle (20° to 25°) (S10.4.2.2) Measurement not recorded
- ☒ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 ___ measured distance (10.6 inches) (S10.5)

- ☒ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- ☒ 21. Fasten the seat belt around the dummy.
- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☒ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 3 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?
 ___ Yes, continue
 ☒ No, go to 26
- ___ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual (S10.9)
- ☒ 26. Check the statement that applies to this test vehicle:
- ___ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ___ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- 26.3 Neither A or B apply **FAIL**
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
 ☒ Yes-Pass; ___ No-FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
 ☒ N/A
 ___ Yes-Pass; ___ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
____ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
____ Yes; go to 5.
☒ No; this form is complete.
- ____ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
____ Yes-Pass; ____ No-FAIL.
Identify the part(s) on top or above the seat
____ seat belt latch plate; ____ buckle; ____ seat belt webbing
- ____ 6. Are the remaining two seat belt parts accessible under normal conditions?
____ Yes-Pass; ____ No-FAIL
- ____ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL.
- ____ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL.
- ____ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Center Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
____ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
____ Yes; go to 5.
☒ No; this form is complete.
- ____ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
____ Yes-Pass; ____ No-FAIL.
Identify the part(s) on top or above the seat
____ seat belt latch plate; ____ buckle; ____ seat belt webbing
- ____ 6. Are the remaining two seat belt parts accessible under normal conditions?
____ Yes-Pass; ____ No-FAIL
- ____ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL.
- ____ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL.
- ____ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
____ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
____ Yes; go to 5.
☒ No; this form is complete.
- ____ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
____ Yes-Pass; ____ No-FAIL.
Identify the part(s) on top or above the seat
____ seat belt latch plate; ____ buckle; ____ seat belt webbing
- ____ 6. Are the remaining two seat belt parts accessible under normal conditions?
____ Yes-Pass; ____ No-FAIL
- ____ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL.
- ____ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL.
- ____ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL

DATA SHEET 26

VEHICLE WEIGHT, FUEL TANK, AND ATTITUDE DATA

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc Test Technician(s): B. Miller, N. Beliveau, D. Summers, J. Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 0 to 48 km/h 0 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Fill the transmission with transmission fluid to the satisfactory range.
- X 2. Drain fuel from vehicle
- X 3. Run the engine until fuel remaining in the fuel delivery system is used and the engine stops.
- X 4. Record the useable fuel tank capacity supplied by the COTR. 34 gallons (128.7 L)
- X 5. Record the fuel tank capacity supplied in the owner's manual. 34 gallons (128.7 L)
- 6.1 Using purple dyed Stoddard solvent having the physical and chemical properties of Type I solvent or cleaning fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents," fill the fuel tank with an amount equal to the useable capacity provided by the COTR.
Amount added
- X 7. Crank the engine to fill the fuel delivery system with Stoddard solvent.
- X 8. Fill the coolant system to capacity.
- X 9. Fill the engine with motor oil to the max mark on the dip stick.
- X 10. Fill the brake reservoir with brake fluid to its normal level.
- X 11. Fill the windshield washer reservoir to capacity.
- X 12. Inflate the tires to the tire pressure on the tire placard. If no tire placard is available, inflate the tires to the recommended pressure in the owner's manual.
Tire placard pressure RF 35 ; LF 35 ; RR 35 ; LR 35
Owner's manual pressure² RF N/A ; LF N/A ; RR N/A ; LR N/A
Actual inflated pressure RF 35 ; LF 35 ; RR 35 ; LR 35
- X 13. Record the vehicle weight at each wheel to determine the unloaded vehicle weight (UVW), i.e. "as delivered" weight).
Right Front - 556.0 kg Right Rear - 409.5 kg
Left Front - 611.0 kg Left Rear - 414.5 kg
TOTAL FRONT - 1167.0 kg TOTAL REAR - 824.0 kg
% Total Weight = 58.6 % % Total Weight = 41.4 %
UVW - TOTAL FRONT PLUS TOTAL REAR - 1991.0 kg
- X 14. UVW Test Vehicle Attitude: (all dimensions in millimeters)
 - X 14.1 Mark a point on the vehicle above the center of each wheel.
 - X 14.2 Place the vehicle on a level surface.
 - X 14.3 Measure perpendicular to the level surface to the 4 points marked on the body and record the measurements
RF 845 ; LF 835 ; RR 918 ; LR 909

- X 15. Calculate the Rated Cargo and Luggage Weight (RCLW).
- X 15.1 Does the vehicle have the vehicle capacity weight (VCW) on the certification label or tire placard?
 Yes, go to 15.3.
X No, go to 15.2.
- X 15.2 VCW – Gross Vehicle Weight – UVW
VCW = 2903.0 - 1991.0 = 912.0
- X 15.3 VCW = 912.0
- X 15.4 Does the certification or tire placard contain the Designated Seating Capacity (DSC)?
 Yes, go to 15.6.
X No, go to 15.5
- X 15.5 DSC – Total number of seat belt assemblies = 3
- X 15.6 DSC = 3
- X 15.7 RCLW = VCW – (68 kg x DSC) = 912.0 - (68 kg x 3) = 708.0
- X 15.8 Is the vehicle certified as a truck, MPV or bus (see the certification label on the door jamb)?
X Yes, the maximum RCLW is 136 kg
 No, use the RCLW calculated in 15.7.
- X 16. Fully Loaded Weight (100% fuel fill)
- X 16.1 Place the appropriate test dummy in both front outboard seating positions.
Driver: 5th female X 50th male
Passenger: 5th female X 50th male
- X 16.2 Load the vehicle with the RCLW from 15.7 or 15.8 whichever is applicable.
- X 16.3 Place the RCLW in the cargo area. Center the load over the longitudinal centerline of the vehicle. (S8.1.1 (d))
- X 16.4 Record the vehicle weight at each wheel to determine the Fully Loaded Weight.
- | | | | | | | | |
|----------------|---|---------------|----|----------------|---|---------------|----|
| Right Front | = | <u>609.0</u> | kg | Right Rear | = | <u>519.5</u> | kg |
| Left Front | = | <u>659.5</u> | kg | Left Rear | = | <u>519.0</u> | kg |
| TOTAL FRONT | = | <u>1268.5</u> | kg | TOTAL REAR | = | <u>1038.5</u> | kg |
| % Total Weight | = | <u>55.0</u> | % | % Total Weight | = | <u>45.0</u> | % |
| % GVW | = | <u>43.7</u> | % | % GVW | = | <u>35.8</u> | % |
- FULLY LOADED WEIGHT – TOTAL FRONT + TOTAL REAR = 2307.0 kg
- X 17. Fully Loaded Test Vehicle Altitude: (all dimensions in millimeters)
- X 17.1 Place the vehicle on a level surface.
- X 17.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 14.1 above) and record the measurements
RF 832 : LF 827 : RR 882 : LR 873
- X 18. Calculate the test weight range (94% fuel fill).
- X 18.1 Calculated Test Weight – Fully Loaded Condition (See 16.4 above) ((.06 x useable fuel tank capacity) x 0.79kg/liter)
Calculated Test Weight = 2307.0 - (.06 x 128.7 l x 0.79 kg/l) = 2300.9 kg
- X 18.2 Test Weight Range – Calculated Test Weight (- 4.5 kg, + 9 kg)
Max. Weight = Calculated Test Weight + 4.5 kg = 2296.4
Min. Weight = Calculated Test Weight - 9 kg = 2291.9
- X 19. Remove the RCLW from the cargo area.

- | | | | | | | | |
|----------------|---|---------------|----|----------------|---|---------------|----|
| Right Front | - | <u>624.8</u> | kg | Right Rear | - | <u>519.6</u> | kg |
| Left Front | - | <u>636.8</u> | kg | Left Rear | - | <u>514.5</u> | kg |
| TOTAL FRONT | - | <u>1261.6</u> | kg | TOTAL REAR | - | <u>1034.1</u> | kg |
| % Total Weight | - | <u>48.7</u> | % | % Total Weight | - | <u>51.3</u> | % |
| % GVW | - | <u>43.5</u> | % | % GVW | - | <u>35.6</u> | % |

TOTAL FRONT PLUS TOTAL REAR - 2295.7 kg

- 021119-1

X 29. Summary of test attitude

X 29.1

AS DELIVERED: RF 845; LF 835; RR 918; LR 909

AS TESTED: RF 830; LF 822; RR 878; LR 871

FULLY LOADED: RF 832; LF 827; RR 882; LR 873

X 29.2 Is the "as tested" test attitude equal to or between the "fully loaded" and "as delivered" attitude?

 Yes

X No, explain why not. Approved by COTR.

¹ At this step the gasoline in the fuel tank was topped off (Stoddard was not introduced until after fully loaded weight and attitudes were obtained). The exact amount of fuel in the tank was unknown.

² The Owner's Manual said to see Certification/Fire Label for tire pressure

³ At this step Stoddard solvent was introduced into the drained fuel tank. 0.94 x 128.7 liters, a total of 121.0 liters was added.

DATA SHEET 27
Vehicle Accelerometer Location

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc.

Test Technician(s): D. Summers

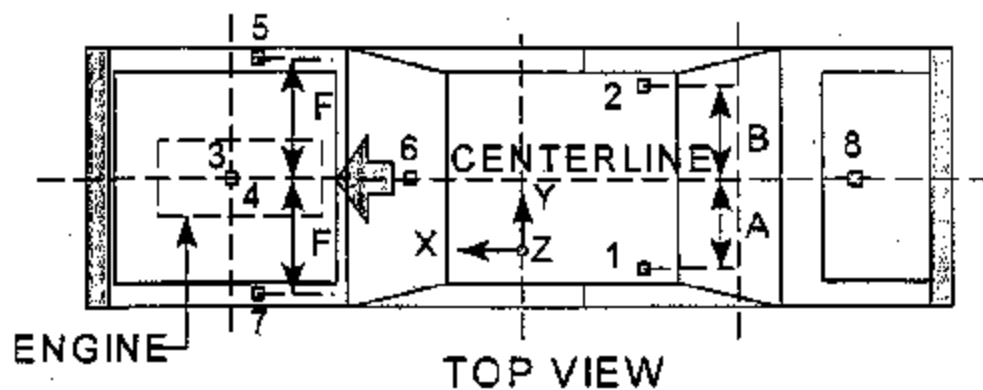
Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

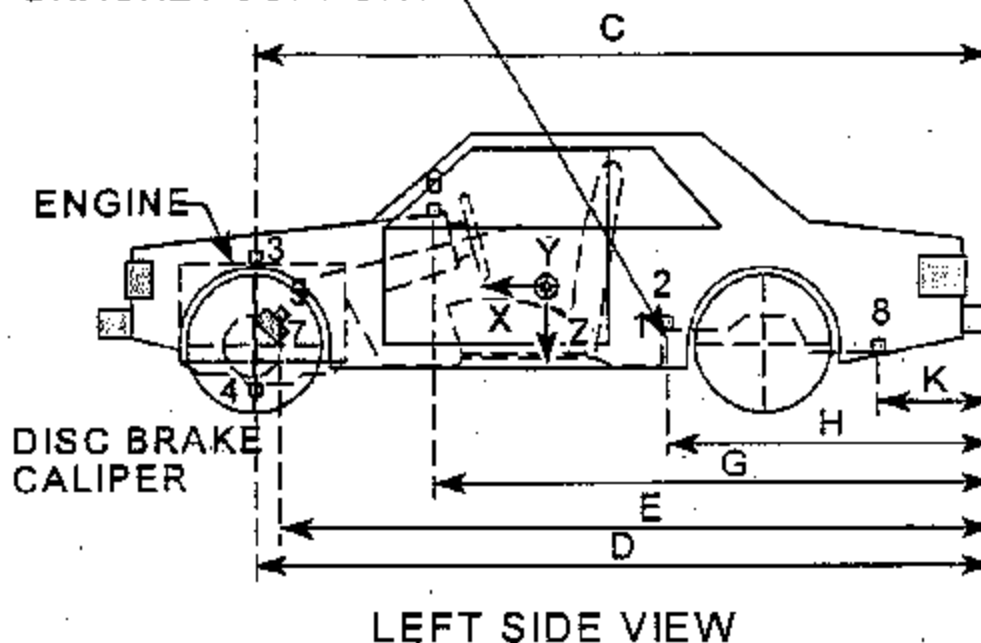
Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the left front outboard seating position intersects the left rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 2. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the right front outboard seating position intersects the right rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 3. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect at the top of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 4. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect the bottom of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 5. Install an accelerometer on the right front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 6. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the top of the instrument panel. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 7. Install an accelerometer on the left front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 8. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the floor of the trunk. Install an accelerometer on the trunk floor at this intersection to record z-direction accelerations. Record the location on the following chart.

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



DATA SHEET 27
VEHICLE ACCELEROMETER LOCATION MEASUREMENTS

| <u>DIMENSION</u> | <u>LENGTH (mm)</u> |
|-------------------------|-----------------------|
| PRE-TEST VALUES | |
| <u>A</u> | 711 |
| <u>B</u> | 673 |
| <u>C</u> | 4757 |
| <u>D</u> | 4452 |
| <u>E</u> | 5067 |
| <u>F</u> | 693 left; 706 right |
| <u>G</u> | 4343 |
| <u>H</u> | 3068 |
| <u>K</u> | 314 |
| POST-TEST VALUES | |
| <u>A</u> | 712 |
| <u>B</u> | 673 |
| <u>C</u> | 4697 |
| <u>D</u> | 4457 |
| <u>E</u> | 4497 left; 4517 right |
| <u>F</u> | 691 left; 691 right |
| <u>G</u> | 3813 |
| <u>H</u> | 2988 |
| <u>K</u> | 307 |

REMARKS

DATA SHEET 28
Photographic Targets

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): D. Summers, N. Echeverria

Impact Angle: 0° Offset percentage: 0 Belted Dummies:
Yes X No

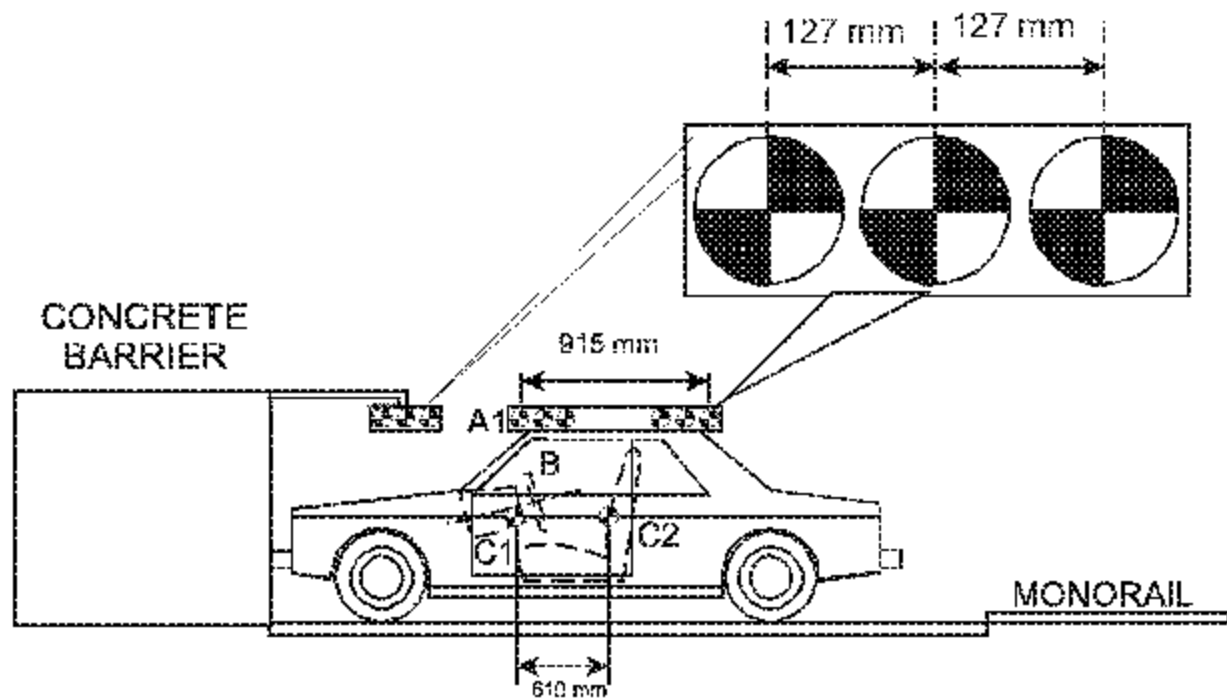
Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

1. FMVSS 208 vehicle targeting requirements (See Figures 28A and 28B)
- X 1.1 Targets A1 and A2 are on flat rectangular panels.
- X 1.2 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the front on the outboard sides of A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 100 mm
- X 1.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the back on the outboard sides of on A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 100 mm
- X 1.4 The distance between the first circular target at the front of A1 and A2 and the last circular target at the back of A1 and A2 is at least 915 mm.
Distance between the first and last circular targets 403 mm
- X 1.5 Firmly fix target A1 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy.
- X 1.6 Firmly fix target A2 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.
- X 1.7 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the driver door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
- X 1.8 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the passenger door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
- 1.9 Place tape with squares having alternating colors on the top portion of the steering wheel.
- 1.10 Chalk the bottom portion of the steering wheel.
- X 1.11 Is this an offset test?
 X Yes, continue with this section
 No, go to 2.
- X 1.12 Measure the width of the vehicle. Vehicle width 1967 mm
- X 1.13 Find the centerline of the vehicle. (½ of the vehicle width)
- X 1.14 Find the line parallel to the centerline of the vehicle and 0.1 x vehicle width from the centerline of the vehicle.
- X 1.15 Apply 25 mm wide tape with alternating black and yellow squares parallel to and on each side of the line found in 1.14. The edge of each tape shall be 50 mm from the line found in 1.14. The tape shall extend from the bottom of the bumper to the front edge of the windshield (Figure 28D)

2. **Barrier targeting**
 - ☒ 2.1 Fix two stationary targets D1 and D2 to the barrier as shown in the Figure 28A. One target is in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy. The other is in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy. Only one target over driver dummy
 - ☒ 2.2 Targets D1 and D2 are on a rectangular panel. No D2 target
 - ☒ 2.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted on the sides of the rectangular panel away from the longitudinal centerline of the vehicle. The center of each circular target is 100 mm from the one next to it.
Distance between circular targets on D1 127 mm
Distance between circular targets on D2 N/A mm
3. **FMVSS 208 dummy targeting requirements**
 - ☒ 3.1 Place a circular target with black and yellow quadrants on both sides of the driver dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
 - ☒ 3.2 Place a circular target with black and yellow quadrants on both sides of the passenger dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
 - ☒ 3.3 Place a circular target with black and yellow quadrants on the outboard shoulder of the driver dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
 - ☒ 3.4 Place a circular target with black and yellow quadrants on the outboard shoulder of the passenger dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
4. **FMVSS 204 targeting requirements**
 - ☒ 4.1 Is an FMVSS 204 indicant test ordered on the "COTR Vehicle Work Order?"
 Yes, continue with this form.
☒ No, this form is complete
 - ☐ 4.2 Resection panel (Figure 28C)
 - ☐ 4.2.1 The panel deviates no more than 6 mm from perfect flatness when suspended vertically.
 - ☐ 4.2.2 The 8 targets on the panel are circular targets at least 90 mm in diameter and with black and yellow quadrants.
 - ☐ 4.2.3 The center of each of the 4 outer targets are placed within 1 mm of the corners of a square measuring 914 mm on each side.
 - ☐ 4.2.4 Locate another square with 228 mm sides and with the center of this square coincident with the center of the 914 mm square.
 - ☐ 4.2.5 The center of the 4 inner targets are placed at the midpoints of each of the 228 mm sides.
 - ☐ 4.3 Place a circular target at least 90 mm in diameter and with black and yellow quadrants on a material (cardboard, metal, etc.) that can be taped to the top of the steering column.
 - ☐ 4.4 Tape the target from 4.3 to the top of the steering column in a manner that does not interfere with the movement of the steering column in a crash

REFERENCE PHOTO TARGETS

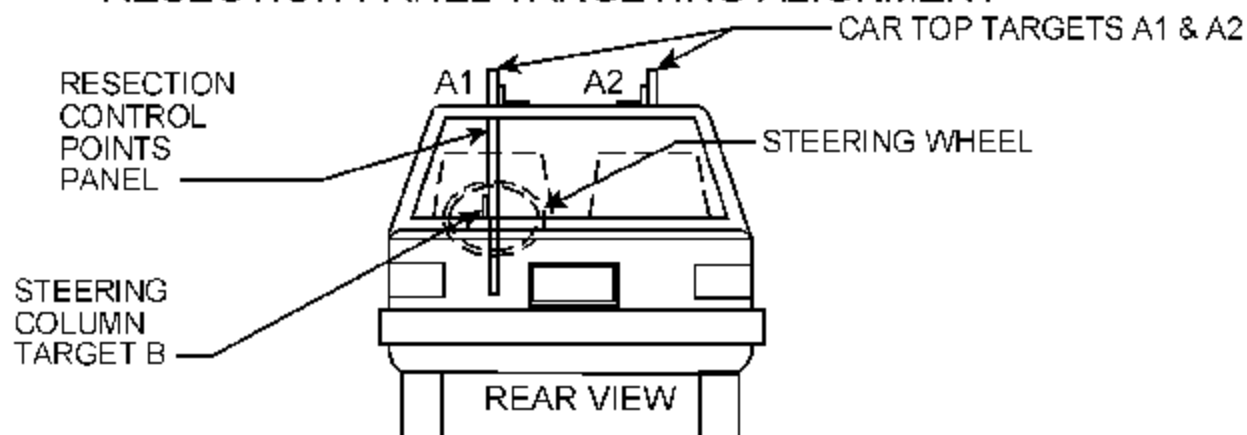


COVERED PHOTO PIT

LEFT SIDE VIEW

FIGURE 28A

RESECTION PANEL TARGETING ALIGNMENT



TEST RUN STEERING COLUMN CAMERA VIEW OF TYPICAL TIME ZERO VEHICLE POSITION

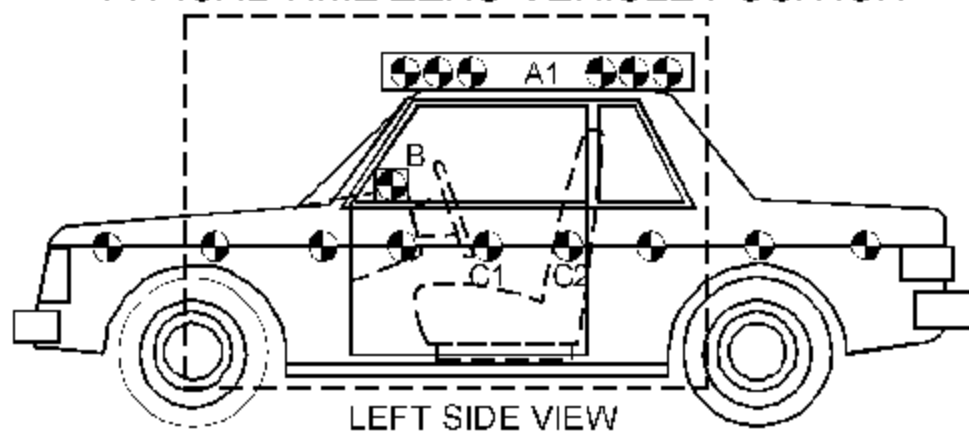
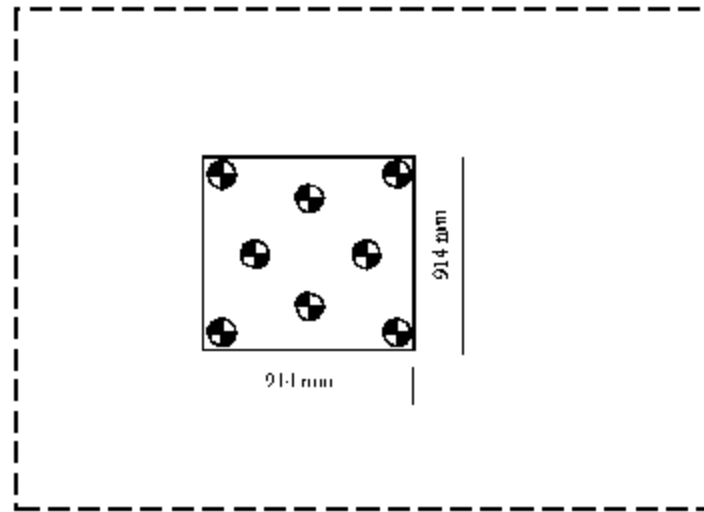


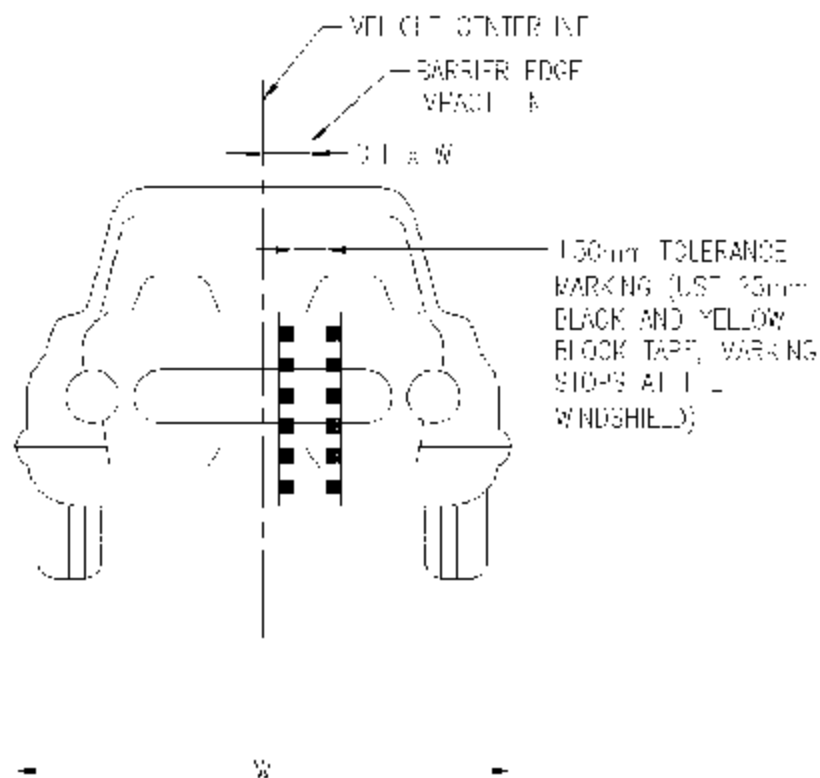
FIGURE 28B

PRE-RUN STEERING COLUMN HIGH SPEED CAMERA VIEW



LEFT SIDE VIEW

FIGURE 28C



OFFSET DEFORMABLE BARRIER ADDITIONAL VEHICLE TARGETING

FIGURE 28D

DATA SHEET 29
CAMERA LOCATIONS

VEH. NHTSA No.: C30102 : TEST DATE: 11/19/02 : TIME: 1617

VEH. YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/Pickup Truck

| CAMERA NO. | VIEW | CAMERA POSITIONS (mm)* | | | ANGLE (deg.) | FILM PLANE TO HEAD TARGET | LENS (mm) | SPEED (fps) |
|-----------------|---|------------------------|-----------------|-----------------|-----------------|---------------------------|-----------|-----------------|
| | | X | Y | Z | | | | |
| 1 | Left Side View | | | | | | | 24 |
| 2 | Left Side View (barrier face to front seat backs) | NA ¹ | NA ¹ | NA ¹ | NA ₁ | NA ¹ | Zoom | 430 |
| 3 | Left Side View (A-post) | -1230 | -7660 | -1380 | 0 | 7200 | 35 | 705 |
| 4 | Left Side View (B-post aimed toward center of steering wheel) | -5000 | -5000 | -2150 | -9 | 4230 | 25 | 250 |
| 5 | Left Side View (B-post) | -1640 | -7220 | -1300 | -3.5 | 7200 | 25 | NA ² |
| 6 | Left Side View (front door under camera 5) | -1600 | -7310 | -950 | 0 | 6820 | 25 | 585 |
| 7 ³ | Right Side View (overall) | -2770 | 9060 | -1300 | -1 | 8480 | 13 | 1000 |
| 8 | Right Side View (A-post) | -900 | 5850 | -1300 | 0 | 5350 | 25 | 1000 |
| 9 | Right Side View (B-post) | -5210 | 5510 | -1940 | -7 | 4670 | 25 | 1000 |
| 10 | Right Side View (front door) | -1300 | 7880 | -1300 | 0 | 7370 | 25 | 1002 |
| 11 ³ | Front View Windshield | 470 | 0 | -2500 | -66 | 2150 | 8.5 | 1000 |
| 12 ³ | Front View Driver | 470 | -270 | -2500 | -62 | 2200 | 17 | 1000 |
| 13 ³ | Front View Passenger | 560 | 230 | -2500 | -62 | 2180 | 17 | 1000 |
| 14 ³ | Overhead Barrier Impact View | 0 | 0 | -5600 | -90 | NA ¹ | 13 | 1000 |
| 15 | Pit Camera Engine View | -900 | 0 | 830 | 90 | NA ¹ | 17 | 685 |
| 16 | Pit Camera Fuel Tank View | -2650 | 130 | 1000 | 90 | NA ¹ | 13 | NA ² |

* -X - film plane forward (downstream) from barrier impact surface

Y - film plane to right of monorail centerline from driver's perspective

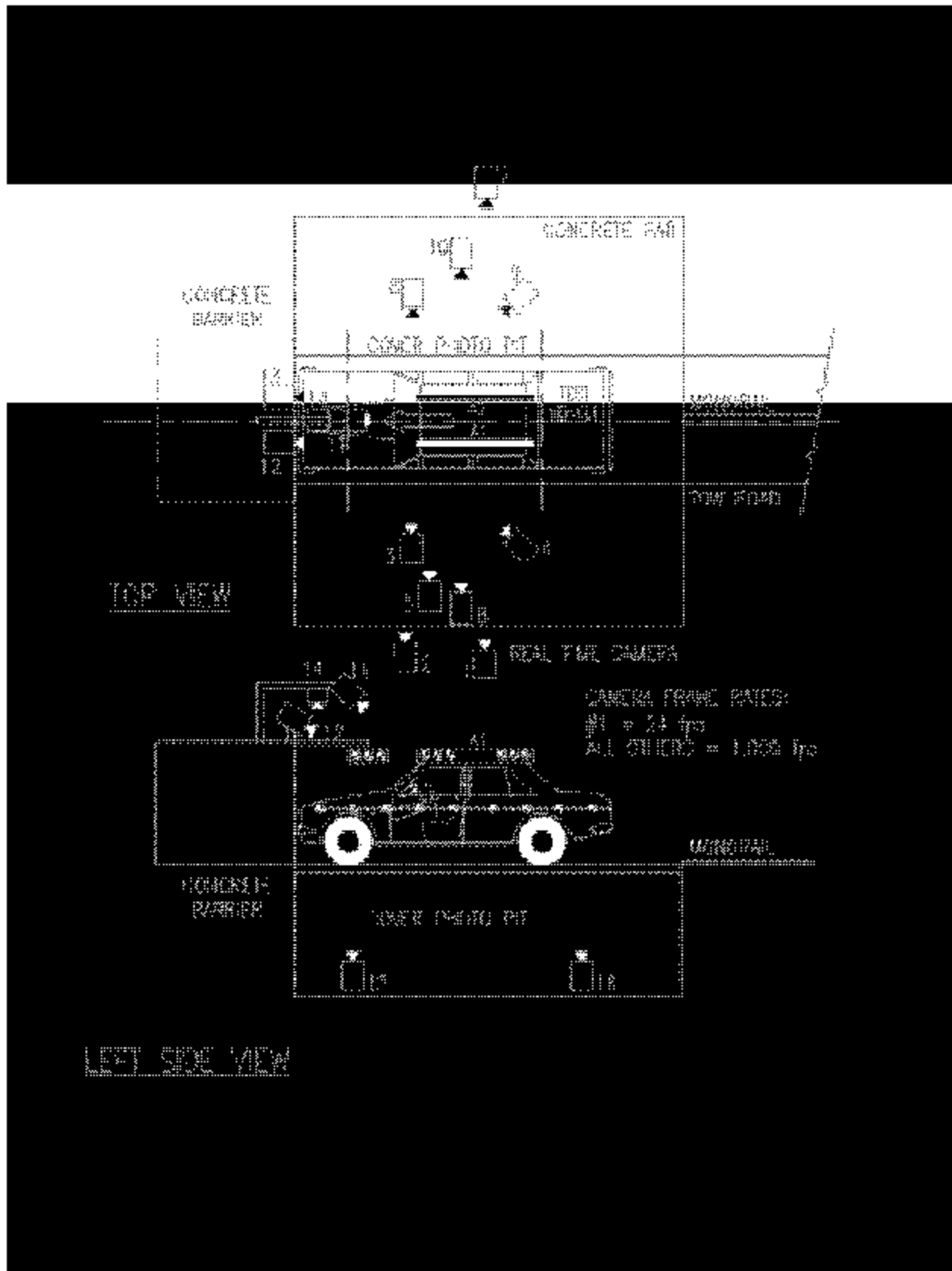
-Z - film plane below ground level

¹ Not applicable

² Unable to determine speed, camera ran too slow to time.

³ Digital camera

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET 30
DUMMY POSITIONING PROCEDURES
FOR DRIVER TEST DUMMY CONFORMING TO SUBPART E OF PART 572

NIITSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc Test Technician(s): J Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S20.1.8.1)
 X N/A - No lumbar adjustment
- X 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S20.1.8.2)
 X N/A - No additional support adjustment
- X 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S20.1.8.3)
 X N/A - No independent fore-aft seat cushion adjustment
- X 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position.
 X N/A - No independent seat cushion height adjustment.
- X 5. Put the seat in its full rearward position.
 N/A - the seat does not have a fore-aft adjustment
- X 6. If the seat height is adjustable, put it in the full down position
 X N/A - No seat height adjustment
- X 7. Draw a horizontal line on the side of the seat cushion. Record the angle of this line, with respect to the horizontal, as the seat cushion reference angle. 0°
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position.
- X 10. If seat adjustments, other than fore-aft, are present and the seat cushion reference angle changes from that measured in 7, use those adjustments to maintain as closely as possible the angle recorded in 7.
 X N/A - No adjustments
Reference angle
Reference angle as tested
- X 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 N/A - No seat back angle adjustment

Manufacturer's design seat back angle 15.5°

Tested seat back angle 15.4°

- X 12. If adjustable, set the head restraint at the full up and full forward position. Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.

 N/A – No head restraint adjustment

- X 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S22.2.1.6.1)

X N/A – No adjustable upper seat belt anchorage

Manufacturer's specified anchorage position. Fixed

Tested anchorage position Fixed

- X 14. Place the adjustable accelerator pedal in the full forward position

X N/A – the accelerator pedal is not adjustable.

- X 15. Is the driver seat a bucket seat?

X Yes, go to 15.1 and skip 15.2.

 No, go to 15.2 and skip 15.1.

X 15.1 Bucket seats.

Locate and mark a vertical Plane B through the longitudinal centerline of the seat. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.

Record the width of the seat. 525 mm

Record the distance from the edge of the seat to Plane B. 263 mm

Go to 16

 15.2 Bench seats (including split bench seats):

Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.

Go to 16

- X 16. Place the dummy in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)

- X 17. Rest the thighs on the seat cushion. (S10.5)

- X 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications (S10.4.2.1 and S10.4.2.2)

X horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded

X vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded

X pelvic angle (20° to 25°) Measurement not recorded

- X 19. Is the head level within ± 0.5°? (S10.1)

 Yes, go to 20

X No, go to 19.1

- X 19.1 Adjust the position of the H-point. (S10.1)

- X 19.2 Is the head level within ± 0.5°? (S10.1)

X Yes, record the following, then go to 20. No, go to 19.3

8 mm forward horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

10 mm vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

24.8° pelvic angle (20° to 25°) (S10.4.2.2)

- ☐ 19.3 Adjust the pelvic angle. (S10.1)
- ☐ 19.4 Is the head level within $\pm 0.5^\circ$? (S10.1)
 - ☐ Yes, record the following, then go to 20. ☐ No, go to 19.5
 - ☐ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - ☐ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - ☐ pelvic angle (20° to 25°) (S10.4.2.2)
- ☐ 19.5 Adjust the neck bracket of the dummy the minimum amount necessary from the non-adjusted "0" setting until the head is level within $\pm 0.5^\circ$. (S10.1)
 - Record the following, then go to 20
 - ☐ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - ☐ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - ☐ pelvic angle (20° to 25°) (S10.4.2.2)
- ☒ 20. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 - 270 mm measured distance (10.6 inches) (S10.5)
- ☒ 21. Can the right foot be placed on the accelerator?
 - ☒ Yes, go to 21.1 and skip 21.2
 - ☐ No, go to 21.2
 - ☒ 21.1 To the extent practicable keep the right thigh and the leg in a vertical plane (S10.5) while resting the foot on the undepressed accelerator pedal with the rearmost point of the heel on the floor pan in the plane of the pedal. (S10.6.1.1)
 - ☐ 21.2 Initially set the foot perpendicular to the leg and then place it as far forward as possible in the direction of the pedal centerline with the rearmost point of the heel resting on the floor pan. (S10.6.1.1)
 - ☐ 21.2.1 Move the adjustable pedal to its most rearward position or until the right foot is flat on the pedal, whichever occurs first. (S10.6.1.1)
 - ☐ N/A the accelerator pedal is not adjustable
- ☒ 22. Does the vehicle have a foot rest?
 - ☐ Yes, go to 22.1
 - ☒ No, go to 22.1.2
 - ☐ 22.1 With the left thigh and leg in a vertical plane, place the foot on the foot rest. (S10.6.1.2)
 - ☐ 22.1.1 Is the left foot elevated above the right foot?
 - ☐ Yes, go to 22.1.2 and position the foot off the foot rest
 - ☐ No, go to 23
 - ☐ 22.1.2 Check the ONLY one of the following that applies
 - ☐ The foot reaches the toeboard without adjusting the foot or leg. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard, skip 22.1.3 (S10.6.1.2)
 - ☐ The foot reaches the toeboard but contacts the brake or clutch pedal and must be rotated to avoid pedal contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard. The foot was rotated about the leg to avoid pedal contact, skip 22.1.3 (S10.6.1.2)
 - ☐ The foot reaches the toeboard but contacts the brake or clutch pedal and the foot and leg must be rotated to avoid pedal contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard. The foot was rotated about the leg and the leg was rotated outboard about the hip the minimum distance necessary to avoid pedal contact, skip 22.1.3 (S10.6.1.2)

- ☐ N/A - the foot does not reach the toeboard, go to 22.1.3
- ☐ 22.1.3 Check the ONLY one of the following that applies
- ☐ The foot did not contact the brake or clutch pedal. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5). Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan. (S10.6.1.2)
- ☐ The foot did contact the brake or clutch pedal and the foot was rotated to avoid contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5). Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan and rotate the foot the minimum amount to avoid pedal contact. (S10.6.1.2)
- ☐ The foot did contact the brake or clutch pedal and the foot was rotated about the leg and the leg was rotated outboard about the hip the minimum distance necessary to avoid pedal contact. Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan and rotate the foot about the leg and the thigh and leg outboard about the hip the minimum distance necessary to avoid pedal contact. (S10.6.1.2)
- ☒ 23. Place the right upper arm adjacent to the torso with the centerline as close to a vertical plane as possible (S10.2.1)
- ☒ 24. Is the driver seat belt used for this test?
 - ☐ Yes, continue
 - ☒ No, go to 25
- ☐ 24.1 Fasten the seat belt around the dummy.
- ☐ 24.2 Remove all slack from the lap belt portion. (S10.9)
- ☐ 24.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☐ 24.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 - ☐ pound load applied
- ☐ 24.5 Is the belt system equipped with a tension relieving device?
 - ☐ Yes, continue
 - ☐ No, go to 25
- ☐ 24.6 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 25
- ☒ 25. Place the left upper arm adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1)
- ☒ 26. Place the right hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- ☒ 27. Place the left hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- ☒ 28. Tape the thumb of each hand to the steering wheel by using masking tape with a width of 0.25 inch. The length of the tape shall only be enough to go around the thumb and steering wheel one time.

DATA SHEET 30
DUMMY POSITIONING PROCEDURES FOR PASSENGER TEST DUMMY
CONFORMING TO SUBPART E OF PART 572

NIITSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc Test Technician(s): J Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. The seat is a bench seat for which the adjustments have already been made for the driver and there are no independent adjustments that can be made for the passenger. Go to 14.
 X N/A - the passenger seat adjusts independently of the driver seat.
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S20.1.8.1)
 X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S20.1.8.2)
 X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S20.1.8.3)
 N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position.
 X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position.
 N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position.
 X N/A - No seat height adjustment
- X 8. Draw a horizontal line on the side of the seat cushion. Record the angle of this line, with respect to the horizontal, as the seat cushion reference angle. 0°
- X 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position
- X 11. If seat adjustments, other than fore-aft, are present and the seat cushion reference angle changes from that measured in 8, use those adjustments to maintain as closely as possible the angle recorded in 8.
 X N/A - No adjustments
Reference angle
Reference angle as tested

- ☒ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ___ N/A No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle _____
- ☒ 13. If adjustable, set the head restraint at the full up and full forward position. Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 ___ N/A No head restraint adjustment
- ☒ 14. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S22.2.1.6.1)
 ☒ N/A – No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position. Fixed
 Tested anchorage position Fixed
- ☒ 15. Is the passenger seat a bucket seat?
 ☒ Yes, go to 15.1 and skip 15.2.
 ___ No, go to 15.2 and skip 15.1.
- ☒ 15.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat (S22.2.1.3). The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 520 mm
 Record the distance from the edge of the seat to Plane B. 262 mm
 Go to 16
- ___ 15.2 Bench seats (including split bench seats):
 Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
 Go to 16
- ☒ 16. Place the dummy in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- ☒ 17. Rest the thighs on the seat cushion. (S10.5)
- ☒ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications (S10.4.2.1 and S10.4.2.2)
 7 mm forward horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 3 mm high vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 22.6° pelvic angle (20° to 25°) (S10.4.2.2)
- ☒ 19. Is the head level within ± 0.5°? (S10.1)
 ☒ Yes, go to 20
 ___ No, go to 19.1
 ___ 19.1 Adjust the position of the H-point. (S10.1)

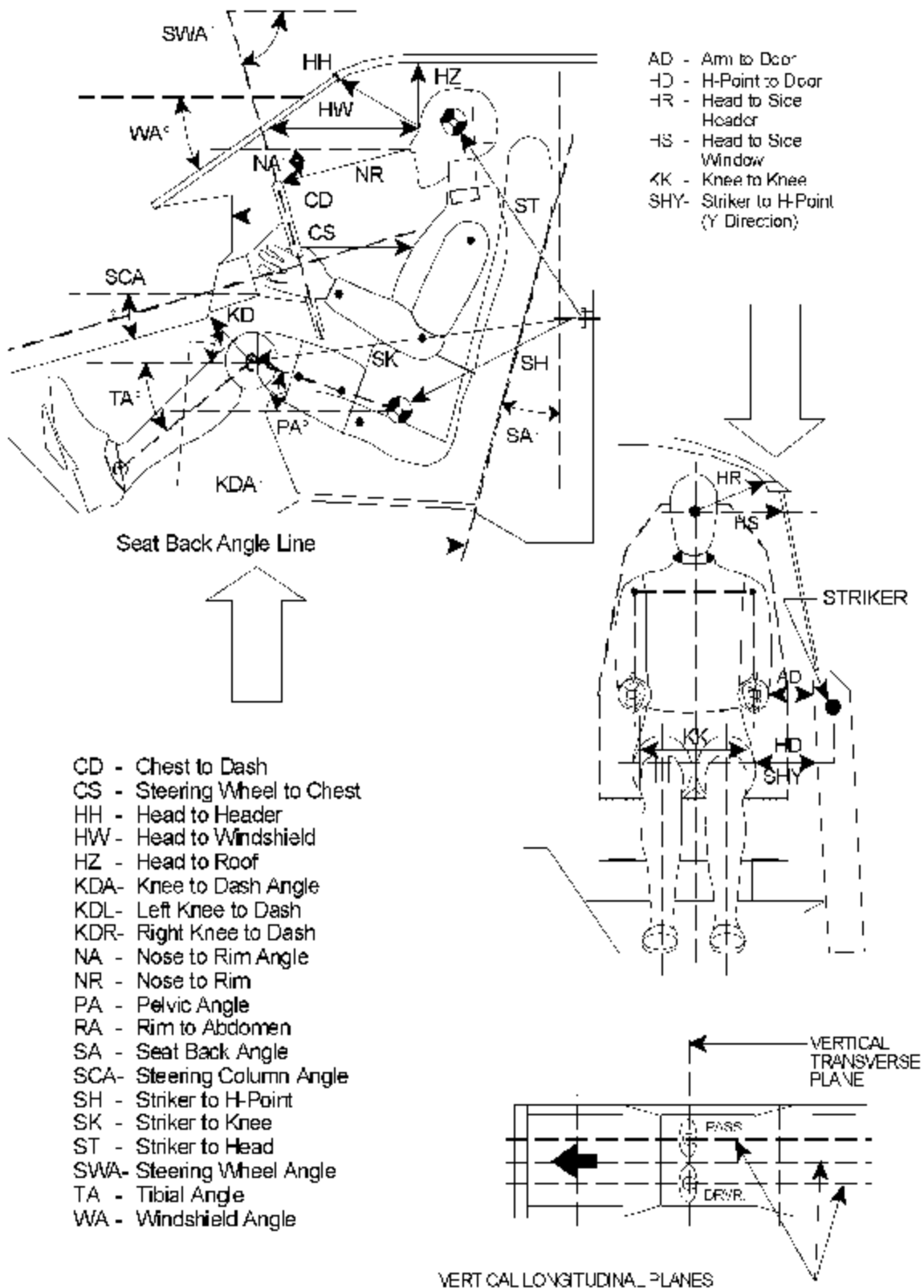
- ____ 19.2 Is the head level within $\pm 0.5^\circ$? (S10.1)
 ____ Yes, record the following, then go to 20. ____ No, go to 19.3
 ____ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ____ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ____ pelvic angle (20° to 25°) (S10.4.2.2)
- 19.3 Adjust the pelvic angle. (S10.1)
- ____ 19.4 Is the head level within $\pm 0.5^\circ$? (S10.1)
 ____ Yes, record the following, then go to 20. ____ No, go to 19.5
 ____ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ____ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ____ pelvic angle (20° to 25°) (S10.4.2.2)
- ____ 19.5 Adjust the neck bracket of the dummy the minimum amount necessary from the non-adjusted "0" setting until the head is level within $\pm 0.5^\circ$. (S10.1)
 Record the following, then go to 20
 ____ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ____ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ____ pelvic angle (20° to 25°) (S10.4.2.2)
- X 20. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 270 mm measured distance (10.6 inches) (S10.5)
- X 21. Check the only one of the following that applies.
 X To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, place the feet on the toeboard with the heels resting on the floor pan as close as possible to the intersection of the floor pan and toeboard.
 ____ The feet cannot be placed flat on the toeboard. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heels resting on the floor pan.
 ____ The vehicle has a wheelhouse projection. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heels resting on the floor pan. Do not set the feet on the wheelhouse projection.
 ____ The vehicle has a wheelhouse projection and the feet cannot be placed on the toeboard. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heel resting on the floor pan. Do not set the feet on the wheelhouse projection.
- X 22. Place the left upper arm in contact with the seat back and side of the torso. (S10.2.2)
- X 23. Is the passenger seat belt used for this test?
 ____ Yes, continue
 X No, go to 24
 ____ 23.1 Fasten the seat belt around the dummy.
 ____ 23.2 Remove all slack from the lap belt portion. (S10.9)
 ____ 23.3 Pull the upper torso webbing out of the retractor and allow it to retract, repeat this four times. (S10.9)
 ____ 23.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 ____ pound load applied

- ___ 23.5 Is the belt system equipped with a tension relieving device?
- ___ Yes, continue
- ___ No, go to 24
- ___ 23.6 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
Go to 24.
- X 24. Place the right upper arm in contact with the seat back and side of the torso. (S10.2.2)
- X 25. Place the left hand palm in contact with the outside of the left thigh and the little finger in contact with the seat cushion. (S10.3.2)
- X 26. Place the right hand palm in contact with the outside of the right thigh and the little finger in contact with the seat cushion. (S10.3.2)

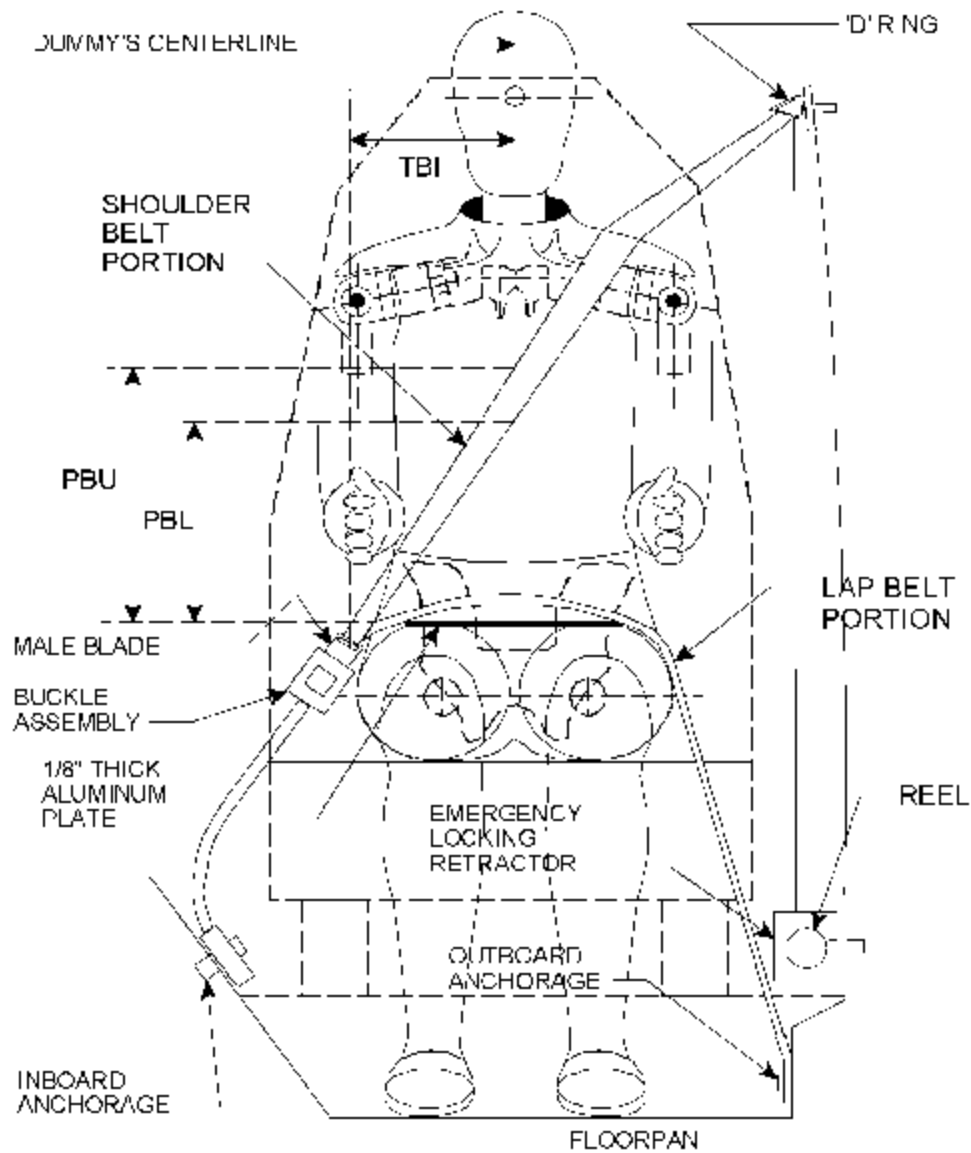
DATA SHEET 31
DUMMY POSITIONING MEASUREMENTS

| | DRIVER (Serial No. 230) | PASSENGER (Serial No. 229) |
|------|--------------------------|-----------------------------|
| WA° | 40 | |
| SWA° | 69.1 | NA |
| SCA° | 20.9 | NA |
| SA° | 15.4 | 15.5 |
| HZ | 270 | 260 |
| III | 527 | 496 |
| HW | 697 | 663 |
| IIR | 250 | 245 |
| NR | 391 ANGLE 9.3° | NA |
| CD | 550 | 486 |
| CS | 314 | NA |
| RA | 178 | NA |
| KDL | 135 ANGLE 33.5° | 130 |
| KDR | 148 | 135 ANGLE 20.7° |
| PA° | 24.8 | 22.4 |
| TA° | 54.9 | 50.2 |
| KK | 320 | 270 |
| ST | 634 ANGLE -74.6° | 640 ANGLE -67.0° |
| SK | 720 ANGLE -3.2° | 727 ANGLE -0.5° |
| SH | 355 ANGLE 12.4° | 335 ANGLE 12.9° |
| SHY | 260 | 245 |
| HS | 278 | 260 |
| HD | 162 | 163 |
| AD | 134 | 141 |

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

DESCRIPTIONS OF DUMMY MEASUREMENTS

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

- * IIII Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.
- * ITW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.
- HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.
- * CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.
- * CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See photograph.
- RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.
- NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).
- *¹ KDL, KDR Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See photograph.
- SH, SK, ST Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target. When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level. The angles of these measurements with respect to the

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See photograph.

The following measurements are to be made within a vertical transverse plane.

- HS Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height that allows a level measurement. Use a level. See photograph.
- * AD Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.
- * IID H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.
- * HR Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.
- SHY Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See photograph.
- KK Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse)

ANGLES

- SA Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.
- PA Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
- SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

| | |
|-----|---|
| SCA | Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column. |
| NA | Measure the angle made when taking the measurement NR with respect to the horizontal. |
| KDA | Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See photograph. |
| WA | Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal) |
| TA | Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal. |

DATA SHEET 32

CRASH TEST

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc.

Test Technician(s): J. Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Vehicle underbody painted
- X 2. The speed measuring devices are in place and functioning
- X 3. The speed measuring devices are 1.5 m from the barrier (spec. 1.5m) and 30 cm from the barrier (spec. is 30 cm)
- X 4. Convertible top is in the closed position.
 X N/A – Not a convertible
- X 5. Instrumentation and wires are placed so the motion of the dummies during impact is not affected
- X 6. Tires inflated to pressure on tire placard or if it does not have a tire placard because it is not a passenger car, then inflated to the tire pressure specified in the owner information.
 240 kPa front left tire 240 kPa specified on tire placard or in owner information
 240 kPa front right tire 240 kPa specified on tire placard or in owner information
 240 kPa rear left tire 240 kPa specified on tire placard or in owner information
 240 kPa rear right tire 240 kPa specified on tire placard or in owner information
- X 7. Time zero markers and switches in-place
- X 8. Pre test zero and shunt calibration adjustments performed and recorded
- X 9. Dummy temperature meets requirements of section 12.2 of the test procedure.
- X 10. Vehicle hood closed and latched
- X 11. Transmission placed in neutral
- X 12. Parking brake off
- X 13. Ignition in the ON position
- X 14. Doors closed and latched but not locked
- X 15. Posttest zero and shunt calibration checks performed and recorded
- X 16. Actual test speed 39.2 km/h
- X 17. Vehicle rebound from the barrier 56.4 cm
- X 18. Describe whether the doors open after the test and what method is used to open the doors.
Left front door Easy
Right front door Easy
Left rear door NA
Right rear door NA
- X 19. Describe the contact points of the dummy with the interior of the vehicle.
Driver dummy Head contacted airbag, sun visor and side header. Chest contacted airbag. Both knees contacted knee bolster.
Passenger dummy Head contacted airbag and sun visor. Chest contacted airbag. Both knees contacted the glove box.

DATA SHEET 34
ACCIDENT INVESTIGATION MEASUREMENTS

NHTSA No.: C30102 Test Date: 11/19/02

Laboratory: TRC Inc Test Technician(s): J Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

Vehicle Year/Make/Model/Body Style: 2003/Chevrolet/Silverado/Pickup Truck

VIN: 1GCEC14X13Z131545

Wheelbase: 3387; Build Date: 08/02

Veh. Size Category: Pickup; Test Weight: 2295.7

Front Overhang: 1004; Overall Width: 1967

Veh. Impact Speed: 39.2; Vel. Change¹: 44.0 km/h

Collision Deformation Classification (CDC) Code: 12FDEW2

¹ From integration of right rear seat crossmember X-axis acceleration.

Impact Mode: 0 Front

Crush Depth Dimensions¹:

C1 - 340 mm

C2 - 407 mm

C3 - 442 mm

C4 = 444 mm

C5 - 399 mm

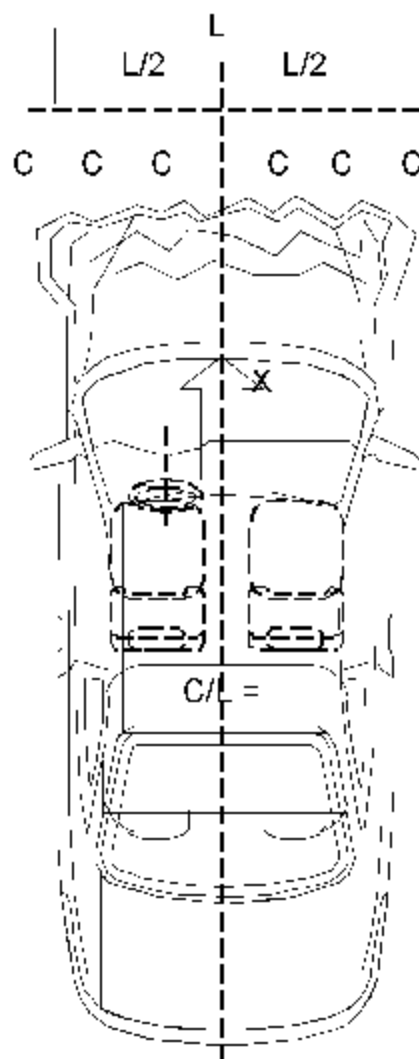
C6 - 354 mm

Midpoint of Damage, D- 0 mm
(Left of Vehicle Longitudinal
Centerline)

Length of Damage Region:

L - 1829 mm

REMARKS:



¹ Numbered from left to right of vehicle.

DATA SHEET 35

WINDSHIELD MOUNTING (FMVSS 212)

NIITSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc

Test Technician(s): D. Summers

Impact Angle: 0°

Belted Dummies: Yes ☒ No ☐

Test Speed:

| | |
|---|---------------|
| X | 32 to 40 km/h |
|---|---------------|

0 to 48 km/h

0 to 56 km/h

Driver Dummy: 5th femaleX 50th male

Passenger Dummy: ____ 5

female X 50⁺ male

Most vehicle windshields are either bonded in place and covered with chrome or plastic strips or they are held to the body by a rubber retainer. It is difficult to determine the exact periphery of the windshield because the glazing edge is hidden from view. The test engineer will measure the perimeter inside the retainer or molding at several locations. After the impact test the covering over the glazing edge may be removed for exact measurement of the windshield periphery. Do not disturb the molding or retainer in the event of a noncompliance.

- X 1. Describe from visual inspection how the windshield is mounted and describe any trim material.

Plastic trim around perimeter, held by adhesive around inner perimeter.

- X 2. Mark the longitudinal centerline of the windshield.

- X 3. Measure pre-crash A, B, and C for the left side and record in the chart below.

- | | |
|----------|--|
| <u>X</u> | 4. Measure pre-crash C, D, and E for the right side and record in the chart below. |
|----------|--|

- | X | Y |
|----|---|
| 5. | Measure from the edge of the retainer or molding to the edge of the windshield. |

Dimension G: 24 mm

- X 6. Can a single thickness of copier type paper (as small a piece as necessary) slide between the windshield and the vehicle body?

| <u>X</u> | No. pass. |
|----------|-----------|
|----------|-----------|

Yes, go to 7.

7. Visibly mark the beginning and end of the portions of the periphery where the paper slides between the windshield and the vehicle body.

8. Measure and record post-crash A, B, C, D, E, and F such that the measurements do not include any of the parts of the windshield where the paper slides between the windshield and the vehicle body.

9. Calculate and record the percent retention for the right and left side of the windshield.

10. Is total right side percent retention less than 75%?

Yes, FALL

No. Pass

11. Is total left side percent retention less than 75%?

Yes, FAIL.

No. Pass

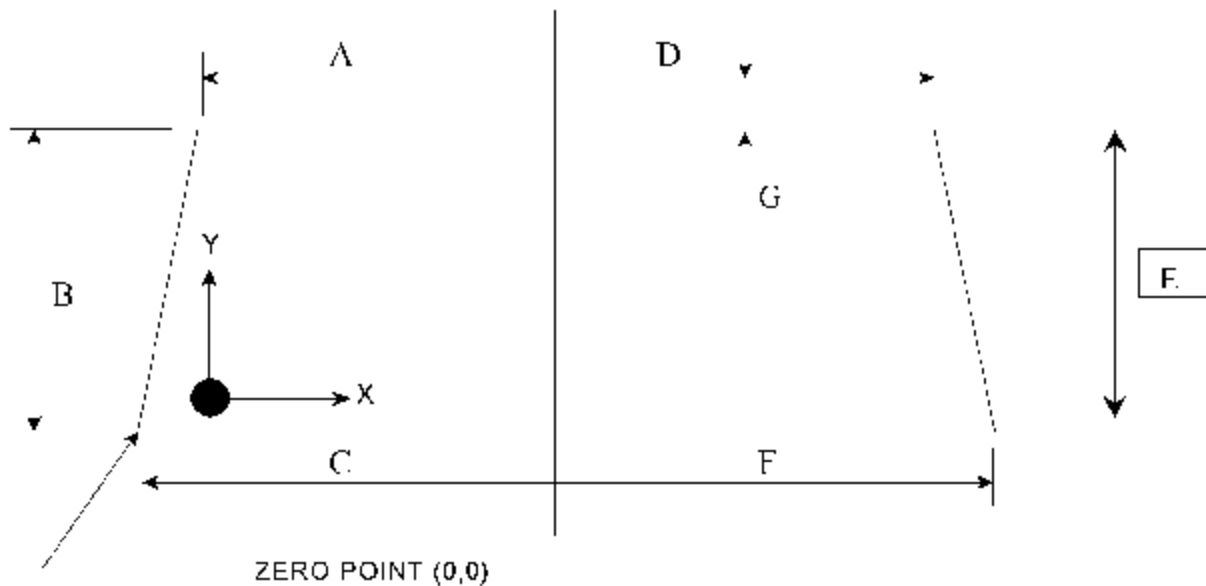
WINDSHIELD PERIPHERY MEASUREMENT

| | Dimension | Pre-crash mm | Post-crash mm | Percent Retention (Post-crash ÷ Pre-crash) |
|---------------------|-----------|-----------------|------------------|---|
| Left side | A | 700 | 700 | |
| | B | 665 | 665 | |
| | C | 880 | 880 | |
| | Total | 2245 | 2245 | 100 |
| Right side | D | 700 | 700 | |
| | E | 665 | 665 | |
| | F | 880 | 880 | |
| | Total | 2245 | 2245 | 100 |
| Width of Molding | G | 18 | | |

Indicate area of mounting failure.

FRONT VIEW OF WINDSHIELD

INDICATE WIDTH OF MOLDING



DATA SHEET 36
WINDSHIELD ZONE INTRUSION (FMVSS 219)

NHTSA No.: C30102 Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): N. Fieheveria, D. Summers, K. Watkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

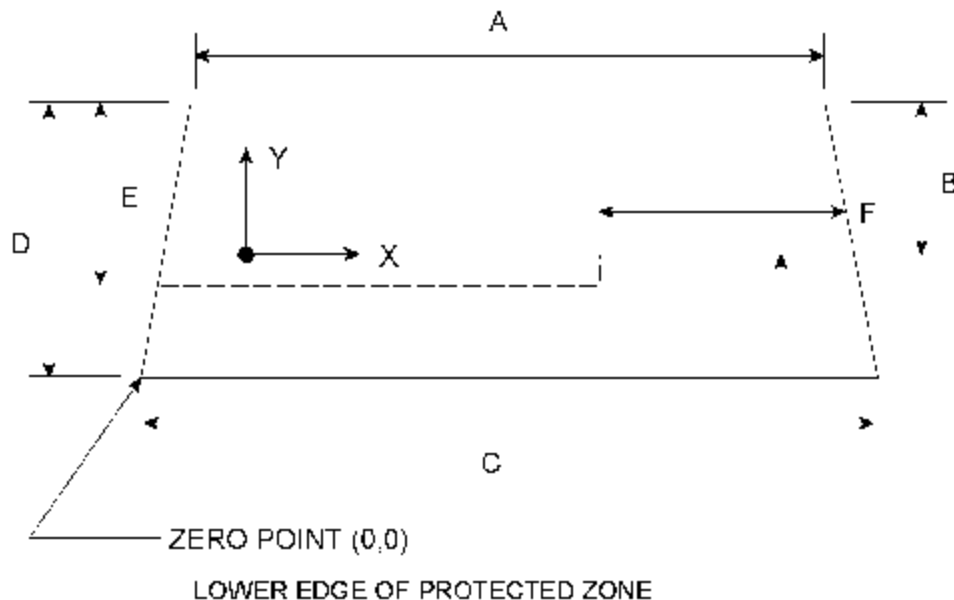
Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Place a 165 mm diameter rigid sphere, with a mass of 6.8 kg on the instrument panel so that it is simultaneously touching the instrument panel and the windshield. (571.219 S6.1(a))
- X 2. Roll the sphere from one side of the windshield to the other while marking on the windshield where the sphere contacts the windshield. (571.219 S6.1(b))
- X 3. From the outermost contactable points on the windshield draw a horizontal line to the edges of the windshield. (571.219 S6.1(b))
- X 4. Draw a line on the inner surface of the windshield that is 13 mm below the line determined in items 2 and 3.
- X 5. After the crash test, record any points where a part of the exterior of the vehicle has marked, penetrated, or broken the windshield.

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.

FRONT VIEW OF WINDSHIELD



A Windshield Dimensions

| A | B | C | D | E | F |
|------|-----|------|-----|-----|-----|
| 1400 | 350 | 1760 | 665 | 447 | 915 |

AREA OF PROTECTED ZONE FAILURES:

- B. Provide coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one which is normally in contact with the windshield.

| X | Y |
|---|---|
| | |
| | |
| | |
| | |

- C. Provide coordinates of the area beneath the protected zone template that the inner surface of the windshield was penetrated by a vehicle component

| X | Y |
|---|---|
| | |
| | |
| | |
| | |

REMARKS:

No penetration into or beneath the protected zone.

DATA SHEET 37
FUEL SYSTEM INTEGRITY (FMVSS 301)

TEST VEHICLE NHTSA NO.: C30102; TEST DATE: 11/19/02

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/Pickup Truck

TYPE OF IMPACT: 0• Front

STODDARD SOLVENT SPILLAGE MEASUREMENT.

A From impact until vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 28 grams)

B. For 5 minute period after vehicle motion ceases

Actual = 0 grams. (Maximum Allowable = 142 grams)

C. For next 25 minutes —

Actual = 0 grams. (Maximum Allowable = 28 grams/minute)

D Provide Spillage Details: None

REMARKS:

No spillage occurred during the interval between test time and the start of the rollover

FMVSS 301 STATIC ROLLOVER DATA SHEET

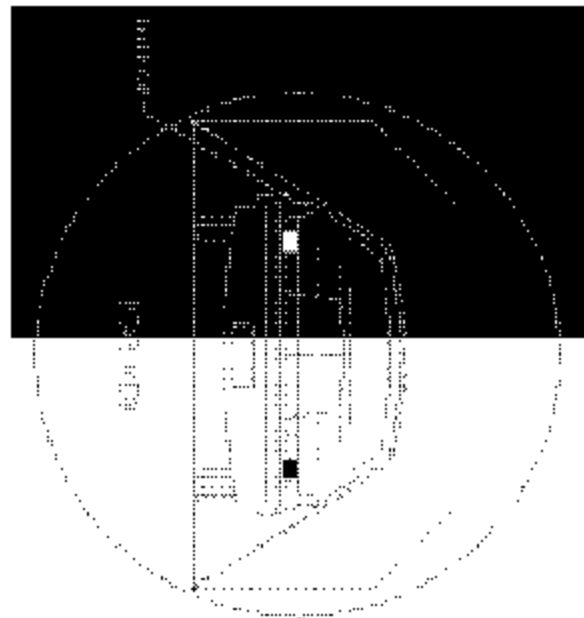
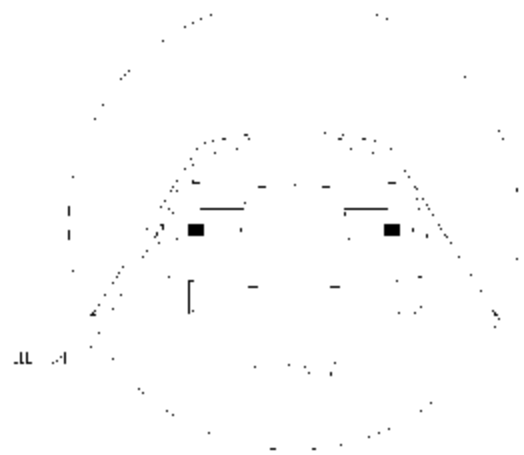
A. TEST PHASE – 0" TO 90"

Determination of Stoddard
Solvent Collection Time Period.

1. Rollover Fixture 90° Rotation Time –
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time – 5 minutes, 0 seconds
3. TOTAL – 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL –
7 minutes

Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

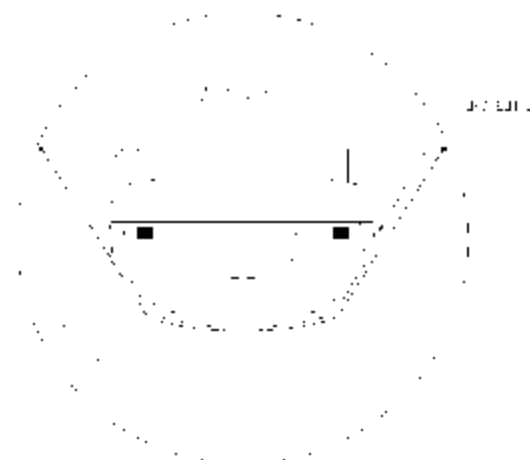
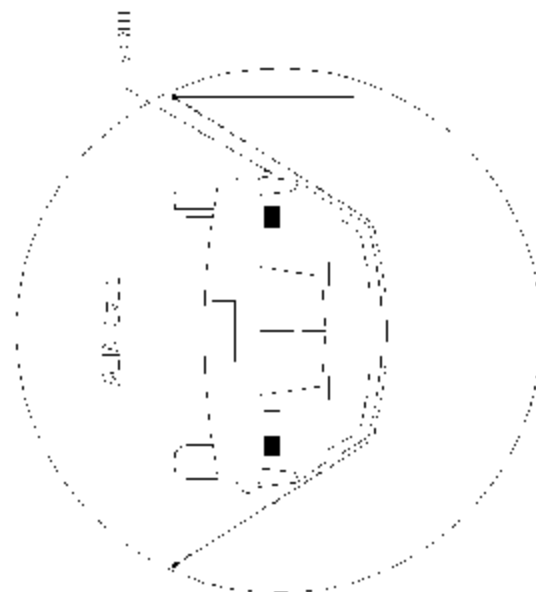
B TEST PHASE = 90° TO 180°

**Determination of Stoddard
Solvent Collection Time Period:**

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL –
7 minutes

**Actual Test Vehicle Stoddard
Solvent Spillage:**

1. First 5 minutes from onset of
rotation – 0 grams
(142 grams allowed)
2. 6th minute – 0 grams
(28 grams allowed)
3. 7th minute – 0 grams
(28 grams allowed)
4. 8th minute (if required) – NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations None

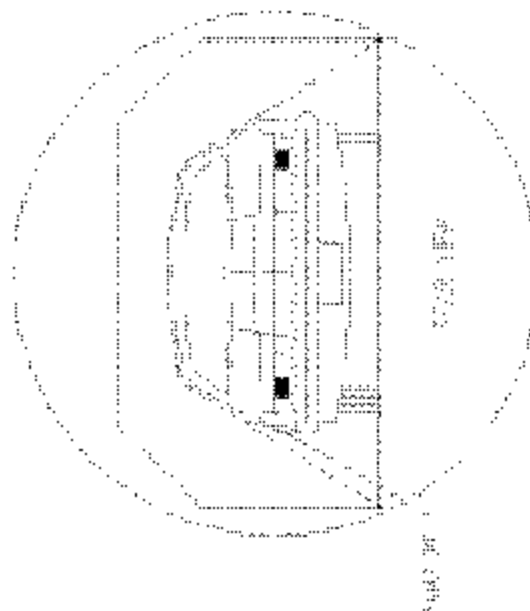
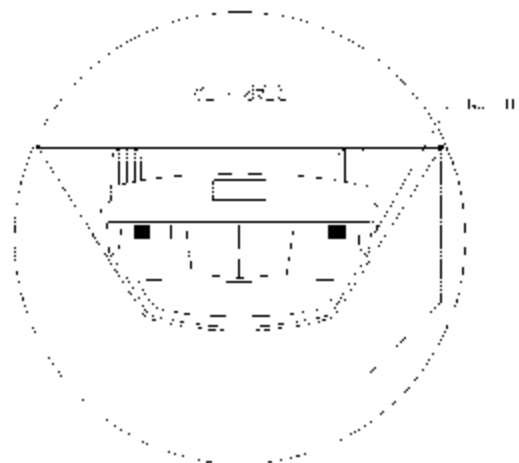
C. TEST PHASE – 180° TO 270°

Determination of Stoddard
Solvent Collection Time Period

1. Rollover Fixture 90° Rotation Time –
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time – 5 minutes, 0 seconds
3. TOTAL – 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL –
7 minutes

Actual Test Vehicle Stoddard
Solvent Spillage

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

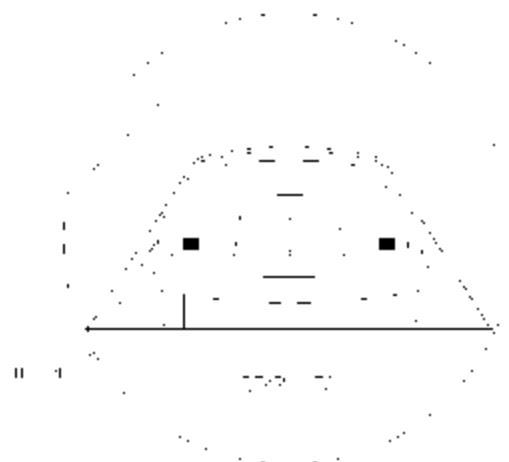
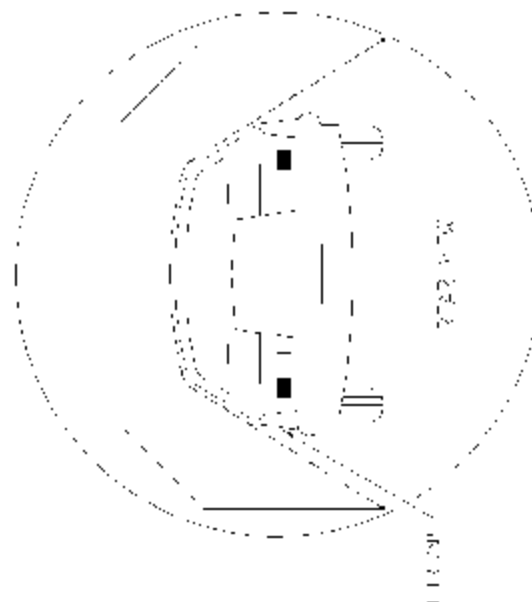
D. TEST PHASE – 270° TO 360°

Determination of Stoddard
Solvent Collection Time Period

1. Rollover Fixture 90° Rotation Time –
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time – 5 minutes, 0 seconds
3. TOTAL – 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL –
7 minutes

Actual Test Vehicle Stoddard
Solvent Spillage

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

Section 6

Test Data

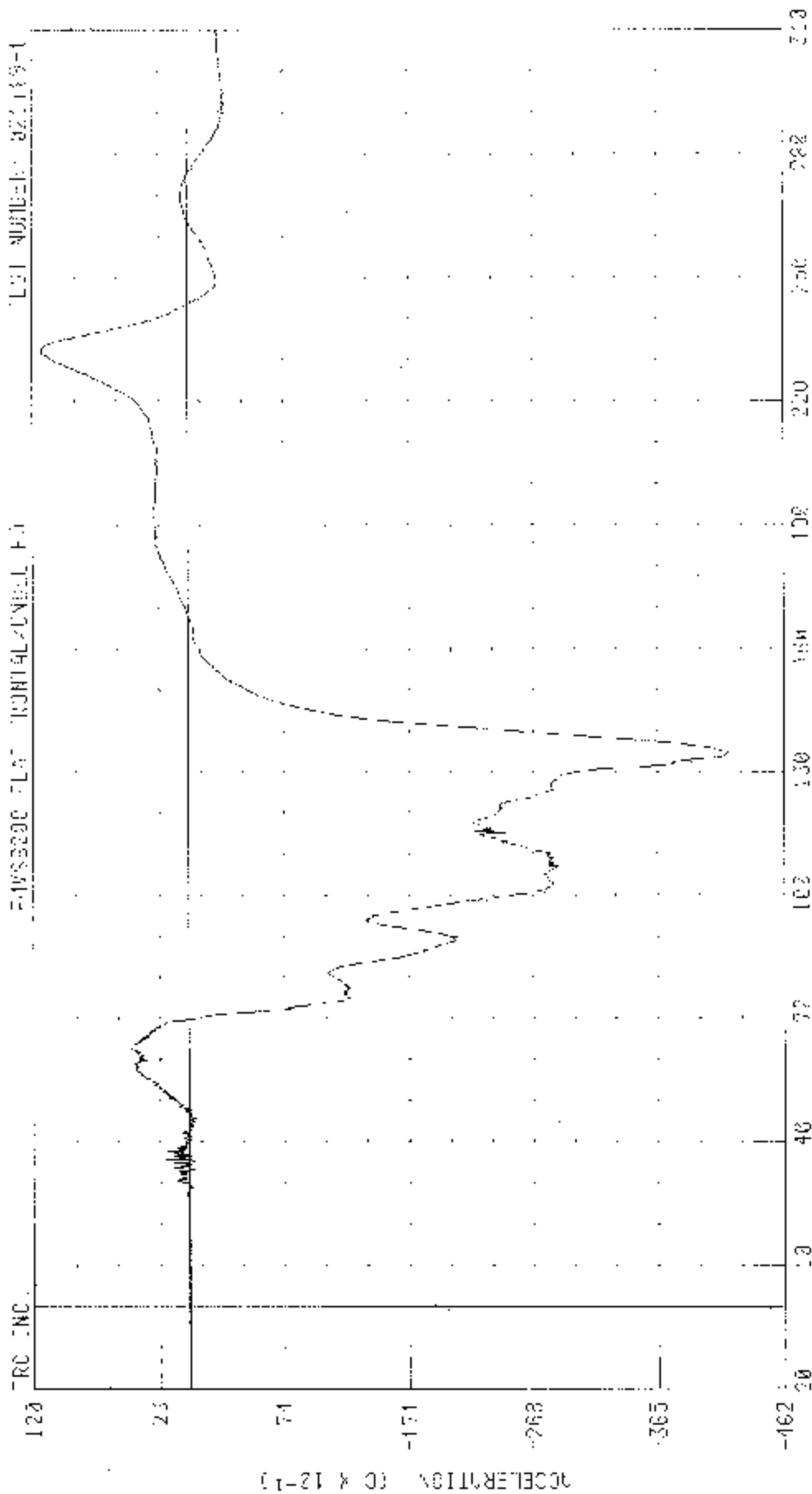
C30192 / 2003 JULY 20 11:51 SILVERADO 1500 2WD REGULAR (00)

DRIVER HEAD X-AXIS ACCELERATION

PMV53200 FLAT TONNAGE/UNBELL F3

RC INC.

LOG NUMBER: 021119-1



TIME (MS)

PEAK DATA 1: 02 0 3 232.24 MS; -1 58 6 3 147 80 PG

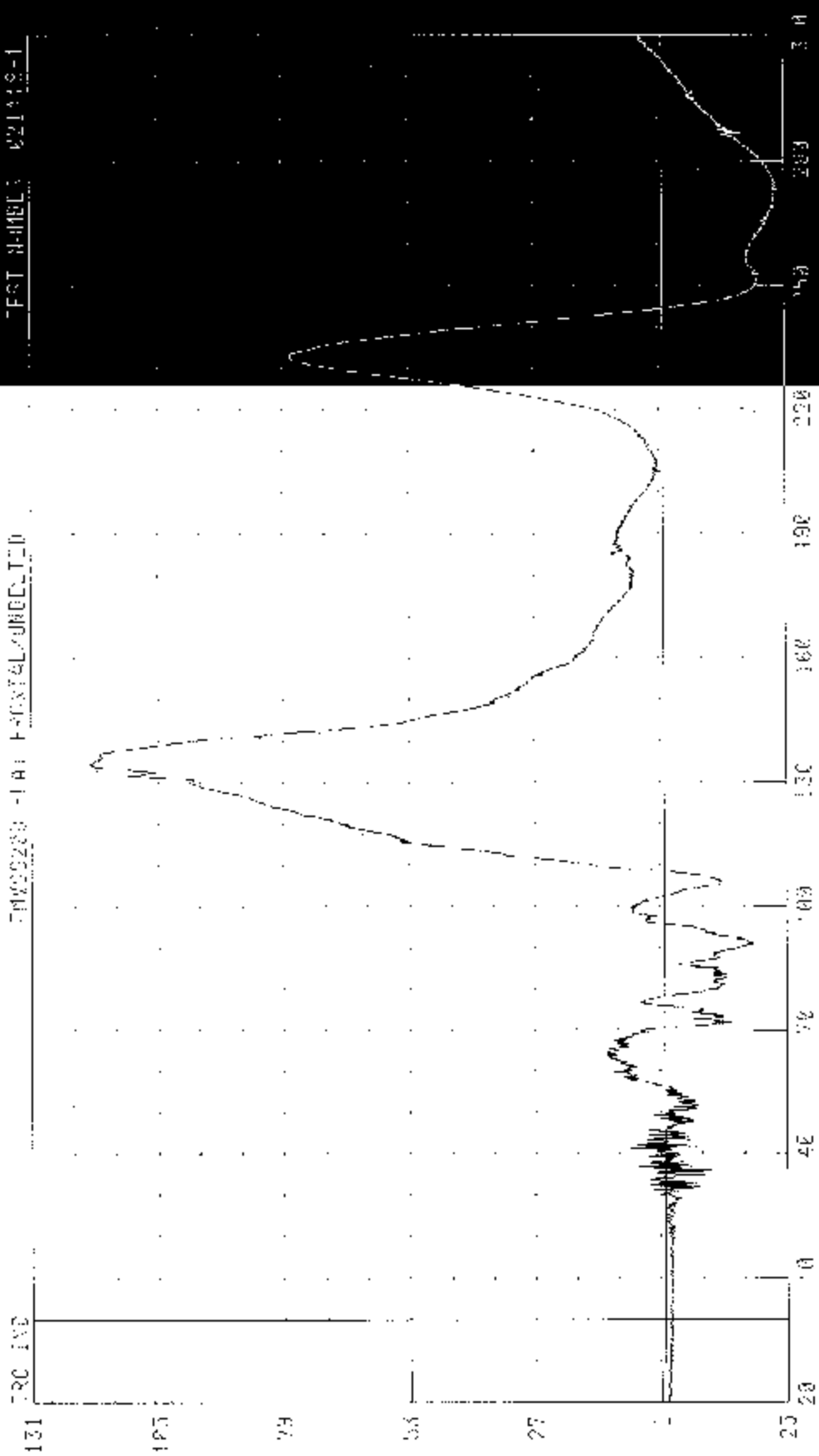
CHANNEL: HILUX01 FILTER: CH CLASS: 1000

030102 / 2003 CHEVROLET SILVERADO 1500 2ND REGULAR CAB

DRIVER LEFT Y AXIS ACCF-FR41104

FM020203 -101 F00141/UNCLE.ITD

-FST RAMEL3 021418-1



ACCF-FR41104 (G x 10^-1)

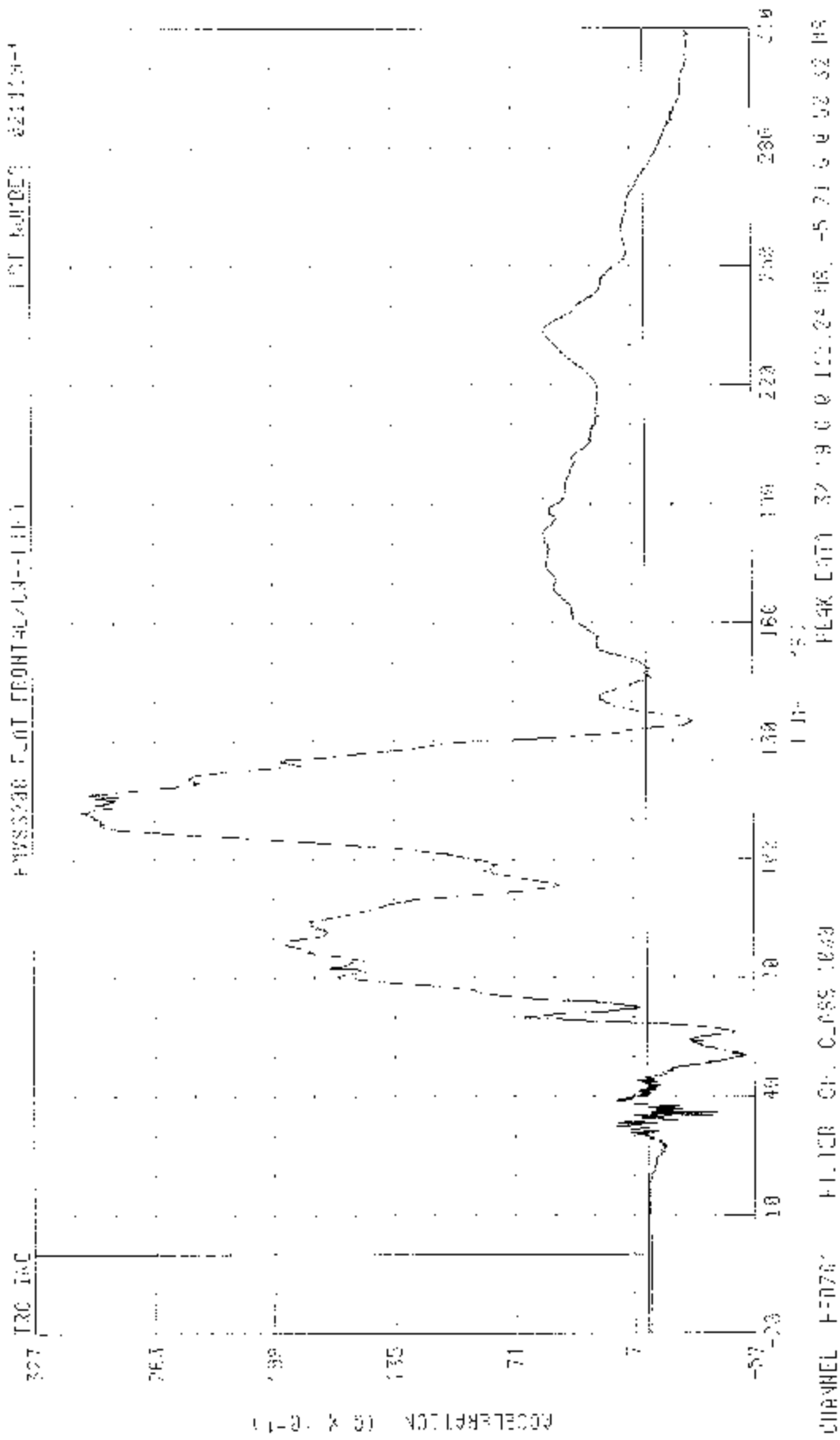
CHANNEL 46161 F01 LR C1 CLASS 1300
 PEAK DATA: 11 95 0 104.10 101 -2 34 1 8 273.20 10

05/01/22 / 2025 EPOCH0 F1 511 KEV 1000 250 RESOLUTION DB0

DRIVER APO 7-AXIS ACCELERATION

PHYS230 FLOT FRONTAL/CL--(111)

LOT NUMBER 021119-1

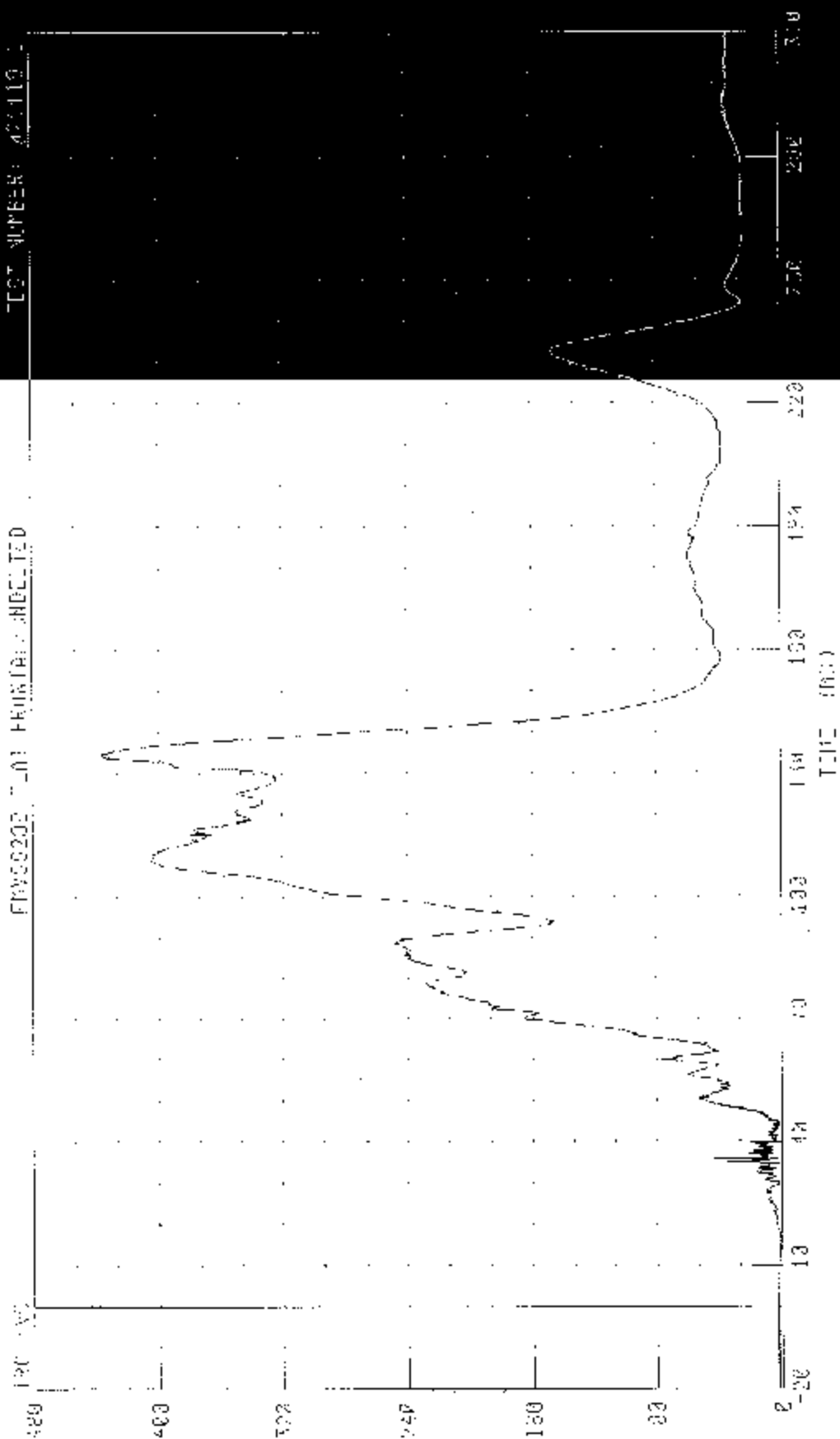


038107 / 5093 "H-VR3LE" 5107247- 1501 WA: RG9642-29

NOTHING TO SAY TO ME

EXCESSIVE INFLATION

— 511.32 : H=3rd Fl. 2571—



```
1: ANAL: =ICBSS
2: ER: 14
3: CLASS: 600
```

100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Tris-HCl: 3.9 g L⁻¹

[illegible]

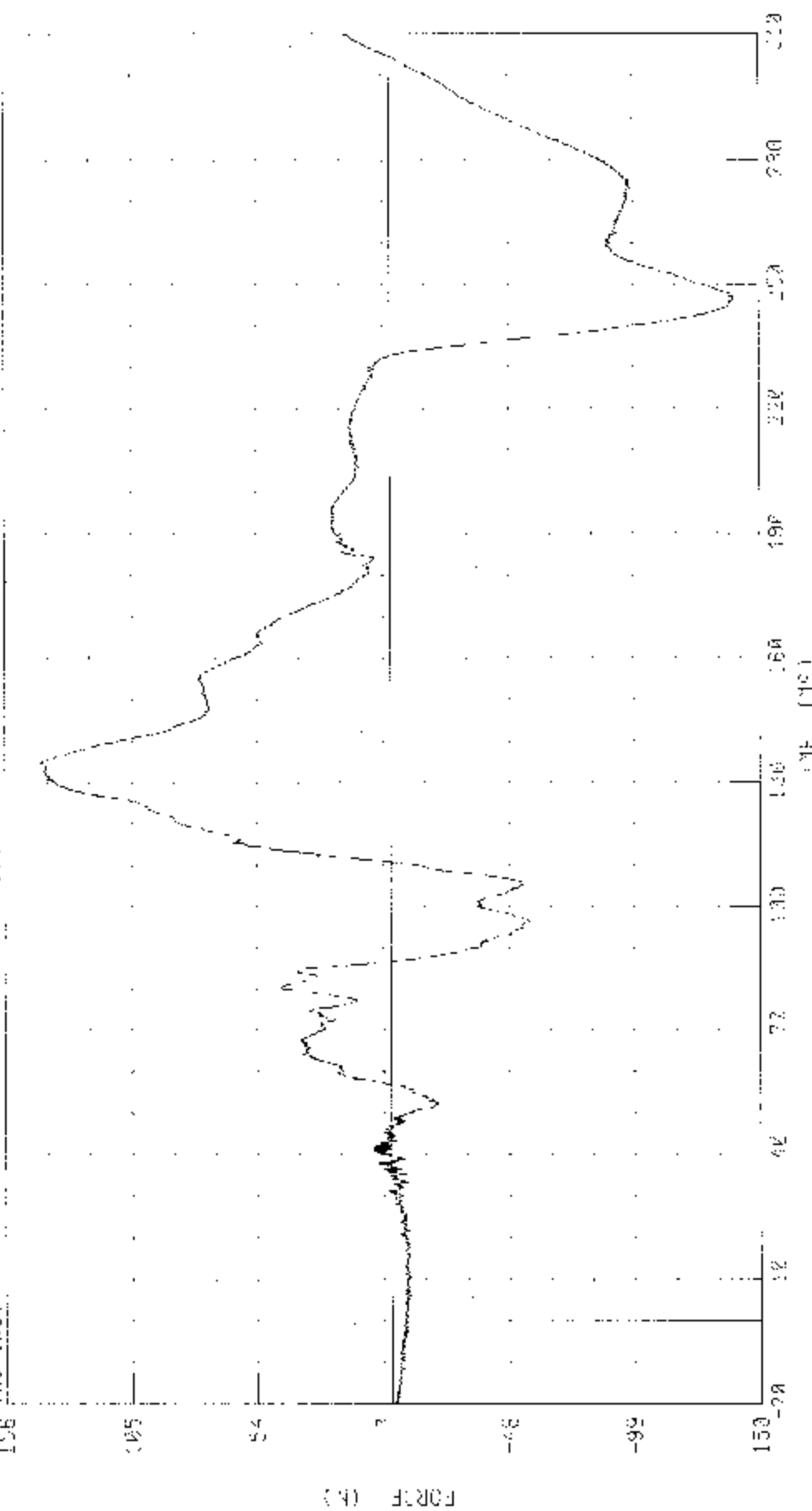
030102 / 2003 CHEVRONET ST. CHARLES, LOUIS 2ND REGULAR CUB

CRIVET ACCO Y-00A S SHEAR FORCE

ENV50208 F AT PROCTAL/DASSELIES

TEST NAME: V 021119-1

IRC INC.



TIME (MS)

CHANNEL YER:F1 F1 F3 C3 CL400 1202

PEAK DATA 141.68 V 8.10 72 P... 130 07 A 0 240 24 0

LET QUOTE UNQUOTE



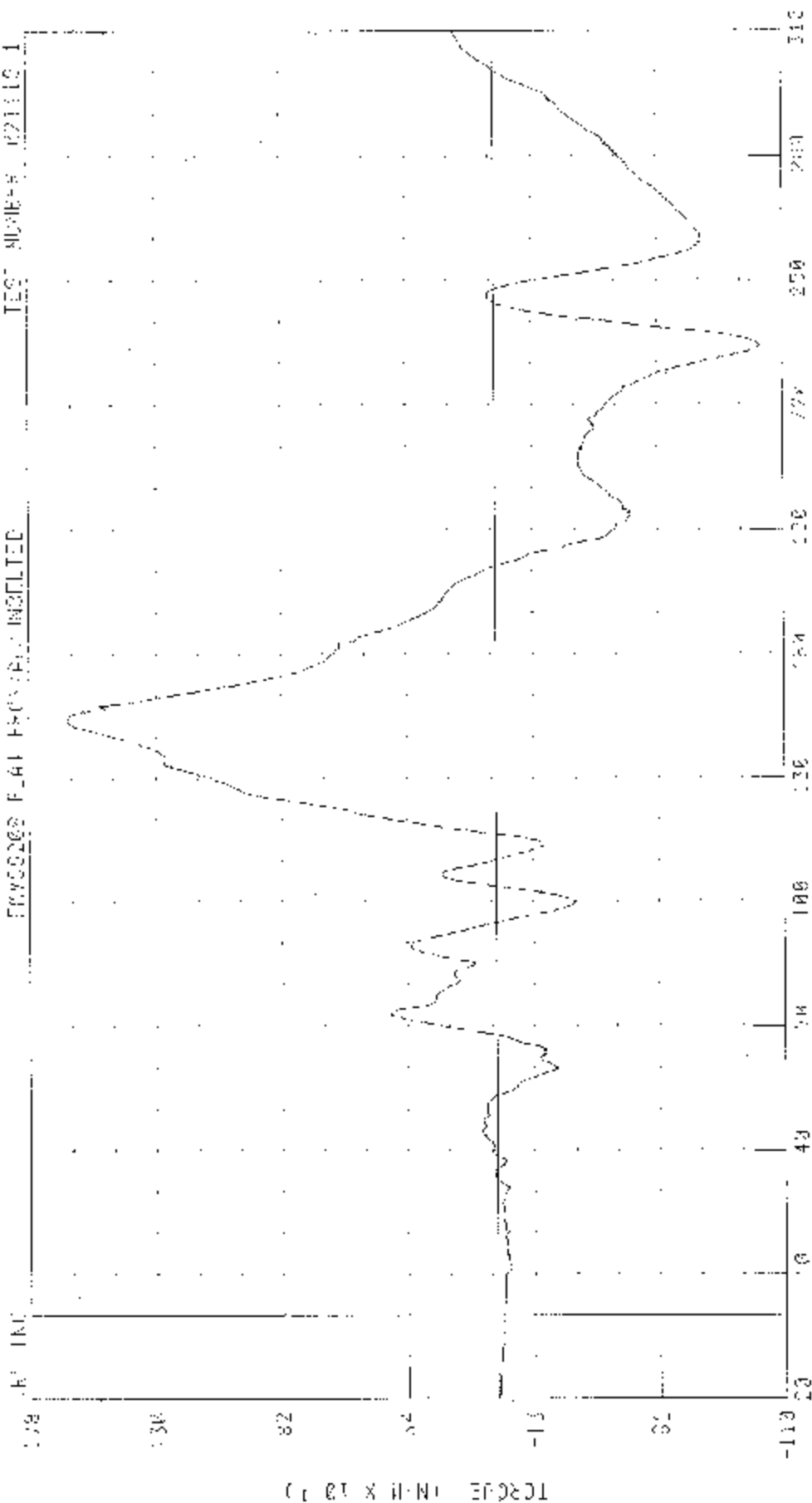
| | | | | | | | | | | | | | | |
|--|-------|------|-------|----|---|---|-------|---|---|------|---|---|------|-------|
| | 94.4% | 1414 | 5.000 | CG | A | 8 | 103.6 | % | = | 99.3 | / | 8 | 99.3 | 34 P. |
|--|-------|------|-------|----|---|---|-------|---|---|------|---|---|------|-------|

030102 / MAX "REARULE" SUPERNOVA 150K 2ND RESIDUAL CNO

DETERMINED FROM 101207 ABOUT X AXIS

FWHM 0.0025 FWHM 0.0025 INCLINED

TEST NUMBER 021119-1



TIME (MS)

CHANNEL VERXIN FILTER CL. CLASS 500

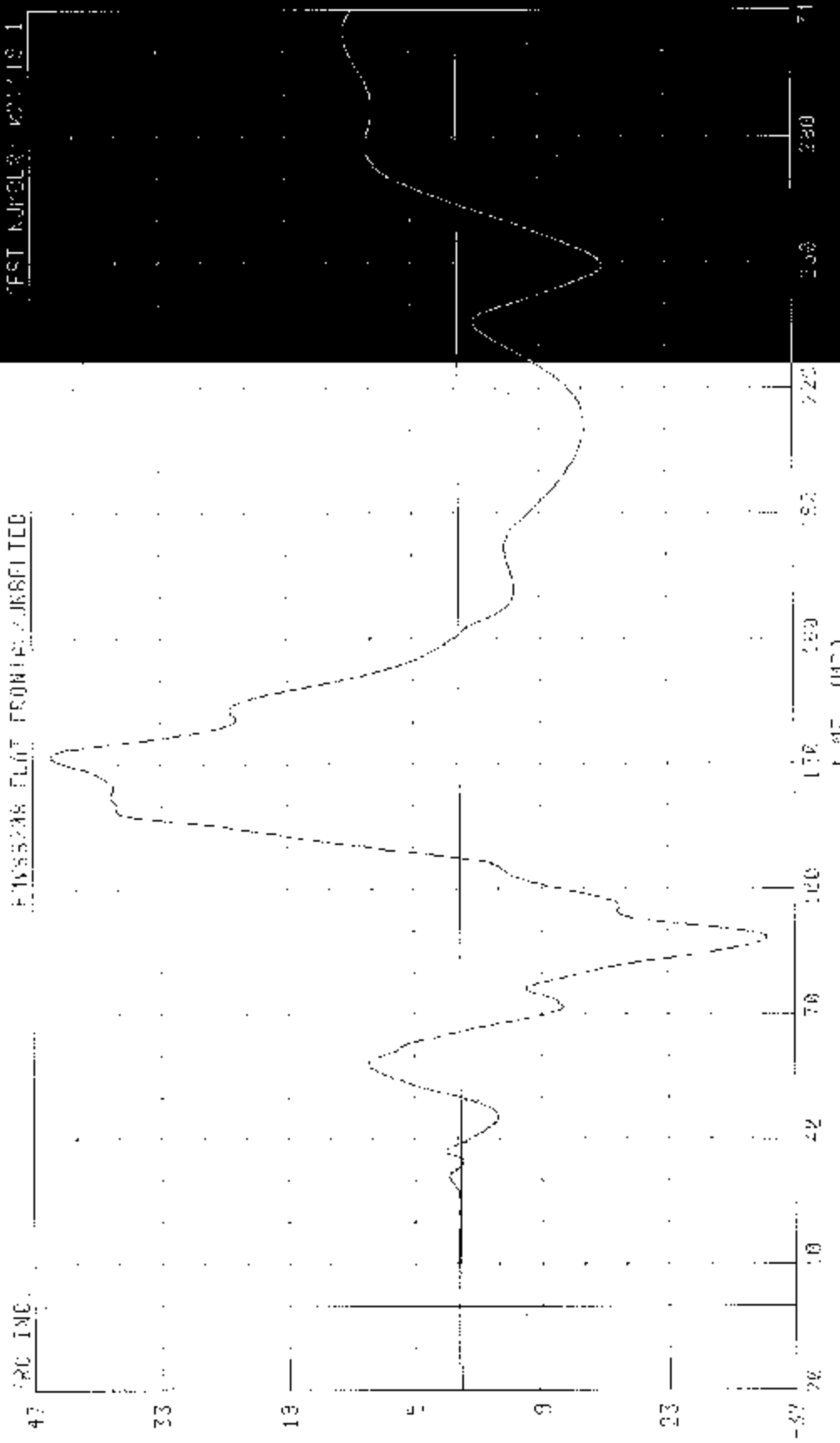
PEAK DATA: 15.00 17.9 144.88 MS - 0.10 N 0.0 234.50 MS

12/22/2003 CHEVY CRUZE 1000 ZWD RECD 10 04

DRIVER RECD HORN AT ABOUT Y 2418

FWSS200 FLAT FROM RECD UNRSFTD

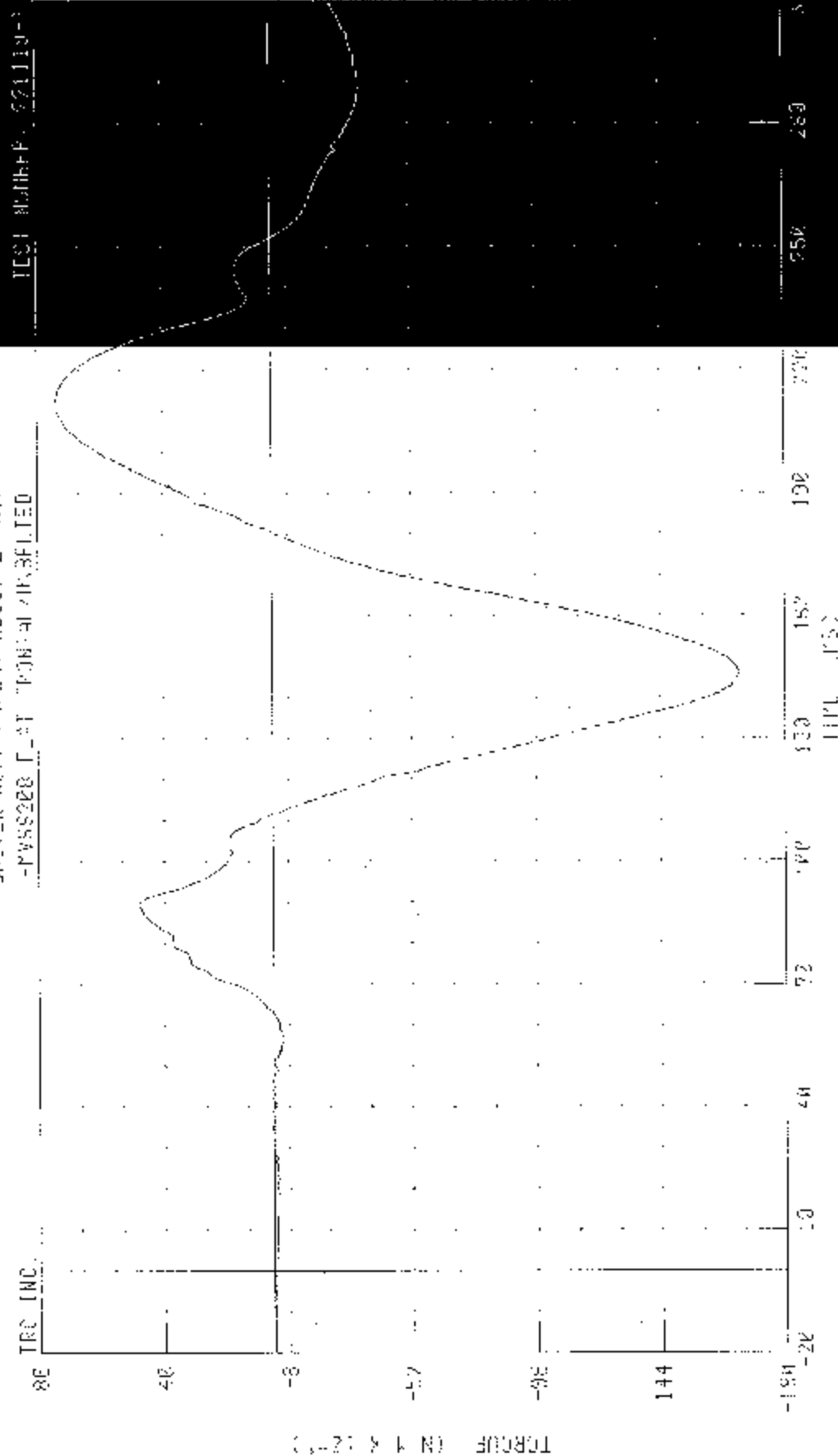
TEST RJSGLA 021119-1



1 417 (H2)

CHANNEL A-KYM1 FILTER CH CLASS 000 CHECK DATA 40 00 N 0 0 131.52 15. 65.50 R H 0 38 40 118

0.30135 / 2005 / HENKOLD / 5 / 025070 / 0000 / 2ND RECORD OF CUR
 DRIVER NETT MOMENT ABOUT Z AXIS
 -PVS5208 L_1 AT TONCHAI AIRFIELD



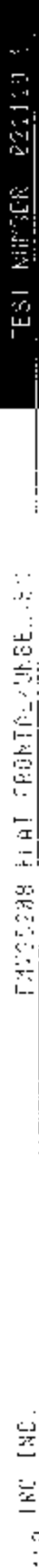
CHANNEL: N=0251 FILTER: C- CLASS: 080
 HPL (PS)
 PEAK DATA: 9.93 N 13.219 84 MS, 17.25 N 18.140 00 PS

052102 / 2023 CITIROLEI SILVERADO 1502 2W1 REGULAR 143

CP 448 4.0 TENSIOCAPTIVATION

EXP05208 F1AT FRONTAL/UNSE...00

TEST NUMBER 021119-1



(2-01 x 10-3) F1A

CHANNEL: N1E1 FILTER: CH CLASS: 010

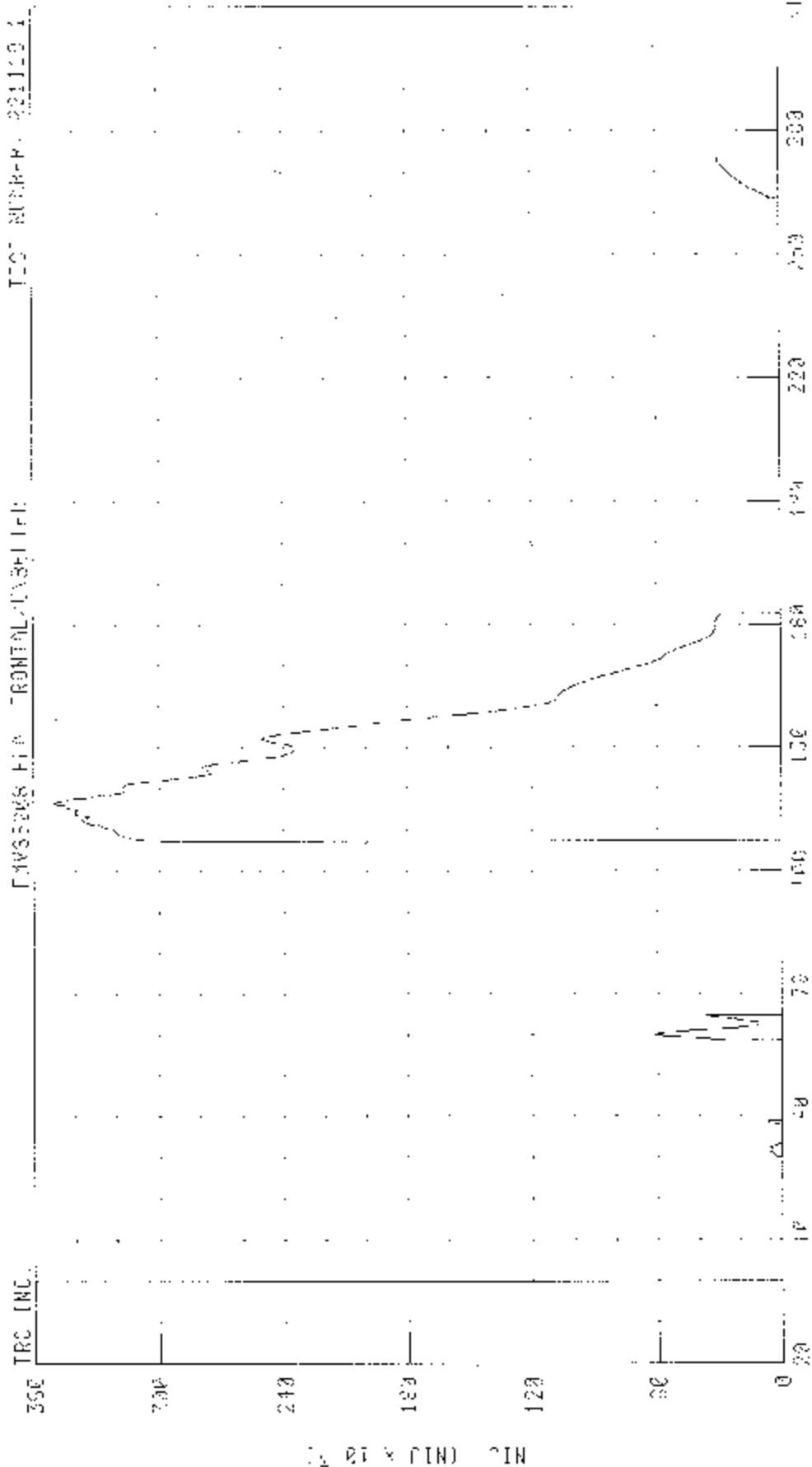
TIME (s)

PLAK 010: 3 40 M1: 3 38 37 05: 0 00 31J 0 -20 40 75

030102 / 2007 CHRYSLER 3.6L V6 R-00 1700 201 R-00 4R (4R)

REPAIR NUT TENSION/FITTING

TRC INC. TRONTAL/USP/IFD TSC NUTR-R 021119-1



PEAK DATA: 100 MIN 100.00, 130 MIN 130.00, 180 MIN 180.00, 200 MIN 200.00, 220 MIN 220.00, 240 MIN 240.00

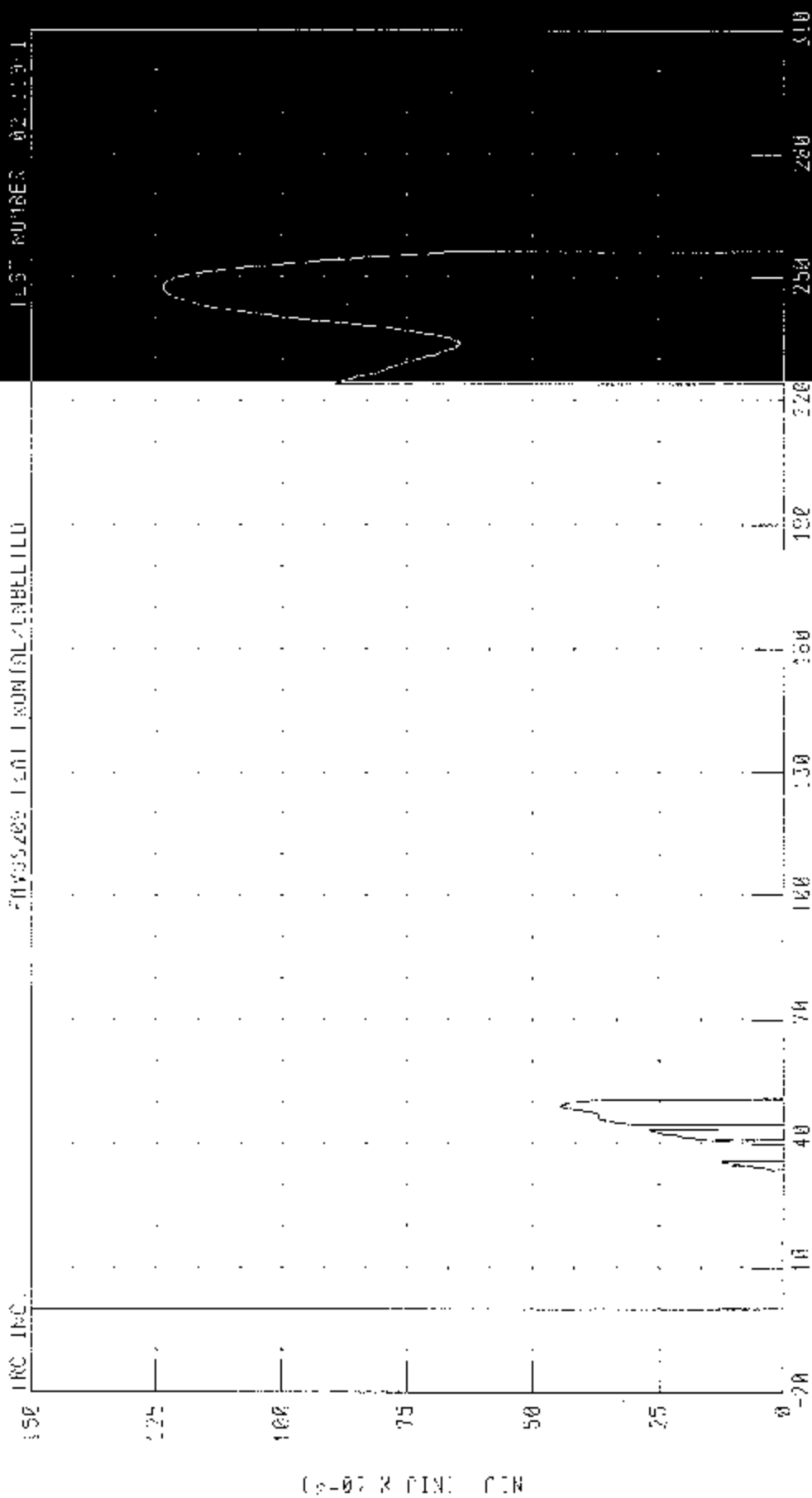
CHANNEL: NUT1 LUTR CP CLASS: 020

030102 / 0003 CHEVRON SILVERADO 1500 2ND REGULAR CAB

CRUISE NO. COMPRESSION EXTENSION

THYSSZ05 1401 1X0N10L1N1BELL110

TEST NUMBER 021119-1



TIME (MS)

PEAK DATA: 0.12 HIJ @ 248.08 MS, 0.30 HIJ @ -20.00 MS

FILTER: CH. CLASS 600

CHANNEL: NCA-1

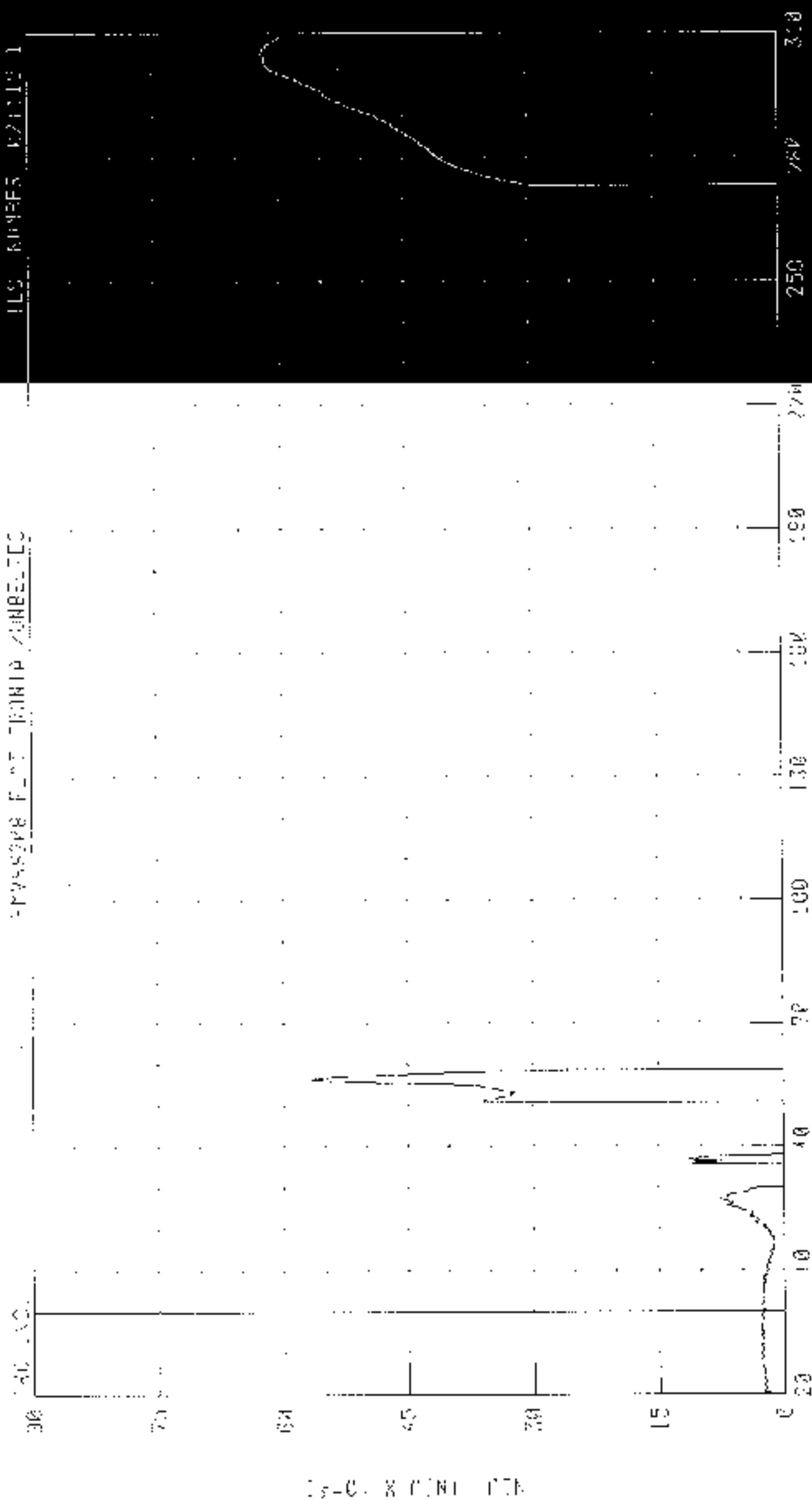
NU (KID X 10^-3)

030100 / 7043 JHEVPCLE" S...R-RED" 1500 END R-0 11 4R C10

DRIVER ALL CORPERS ON FLEXION

SPYAS208 F...T TECHIP ZONBELTCS

ILS R09BF5 121119 1



TIME (MS)

CIRCUIT NO.1 FILTER: ON CLASS 300

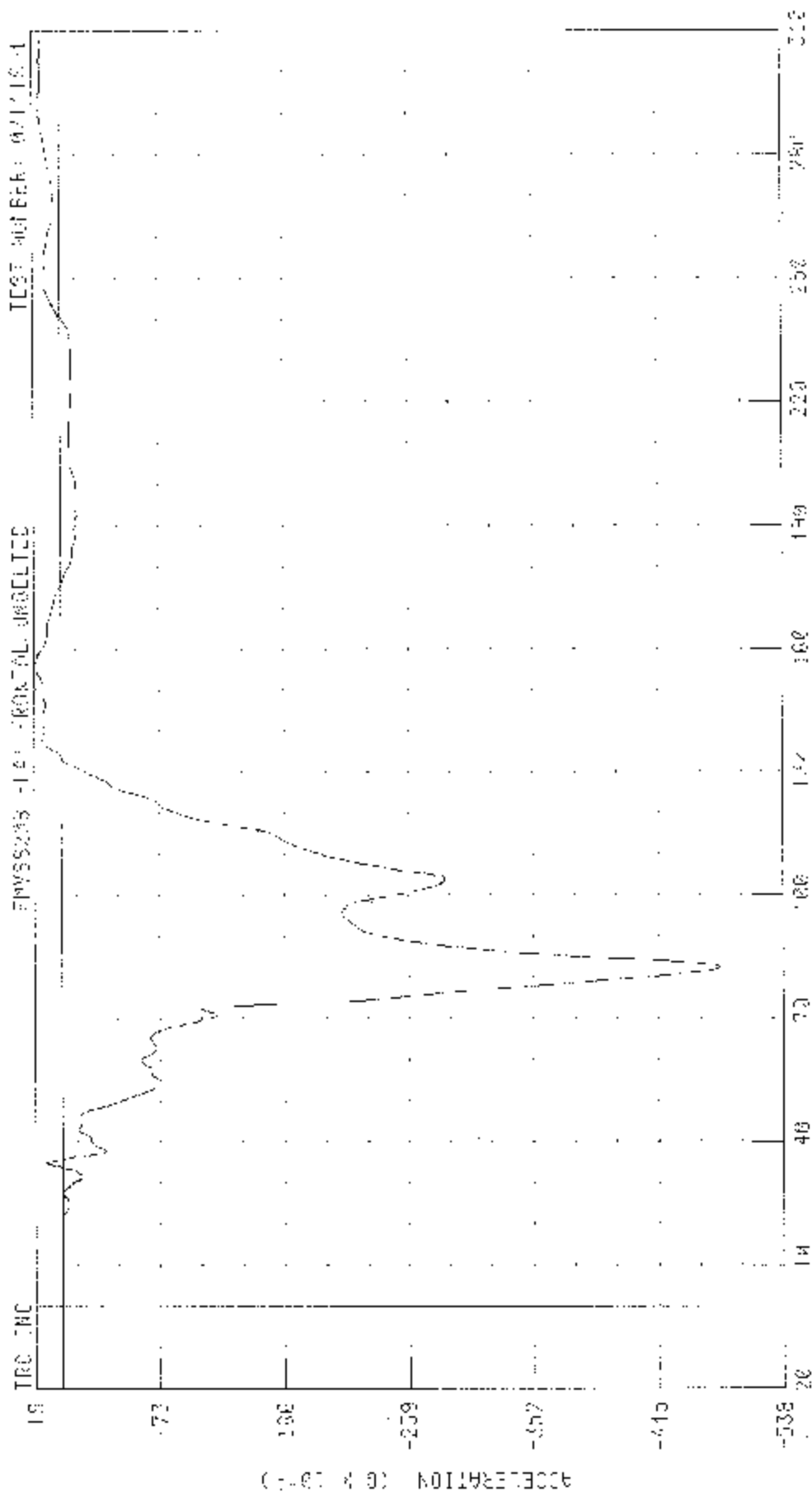
PER DATA 0.40 MS 0 304.00 MS 0 23 K... 0 30 02 15

030119 / 2023 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER SEAT X AXIS ACCELERATION

FMVSS225 F141 FRONTAL IMPACT

TEST NUMBER: 001119-1



CHANNEL: CS1X02 FILTER: ON CROSS 180

TRK TRS

PEAK DATA: 1 00 0 0 156 32 18, 49 00 0 0 80 40 18

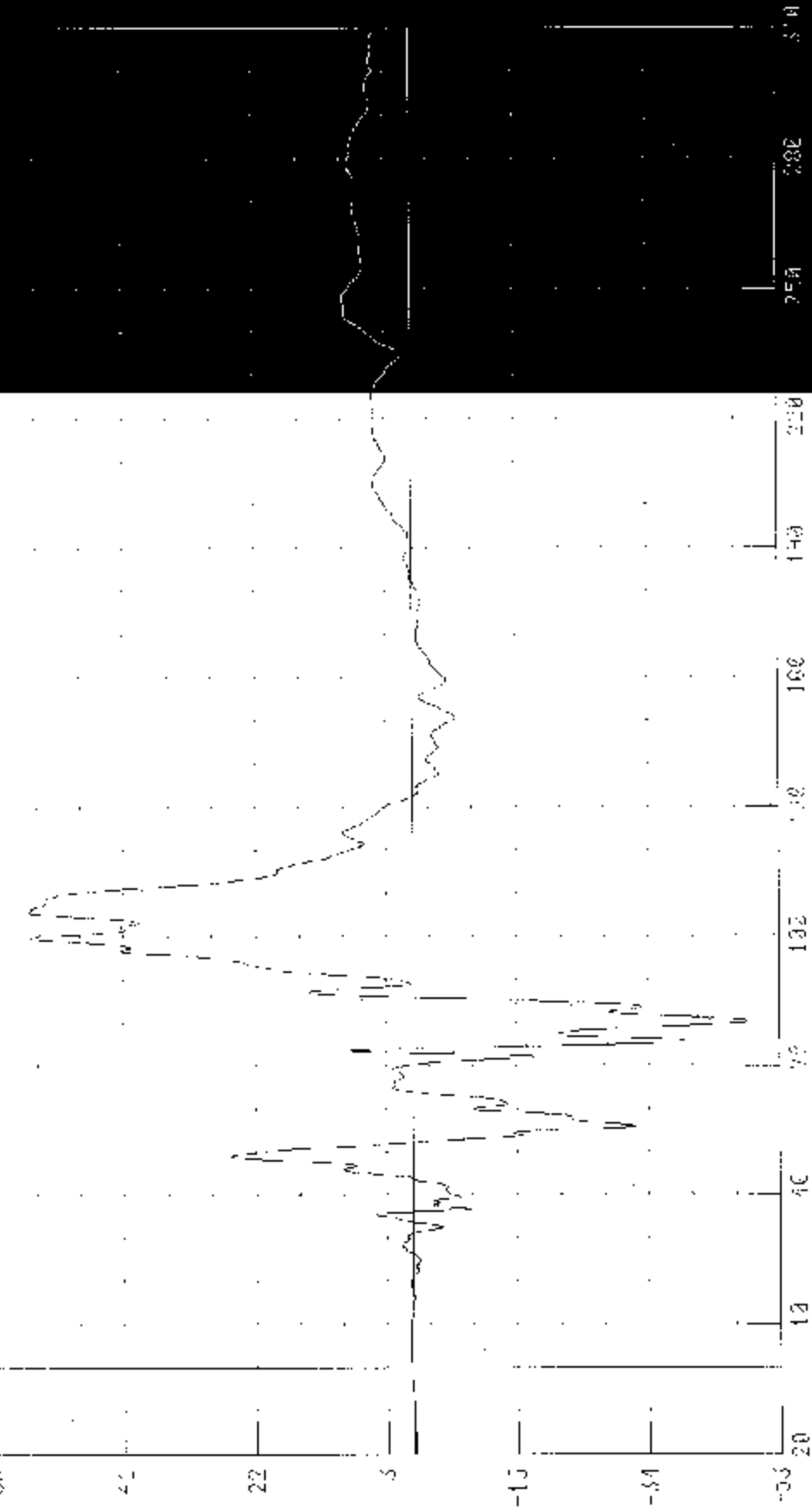
030102 - 2000 CHARACTERISTICS 1000 200 RESOLUTION

DRIVER CHAN 1-Axis Acceleration

PROSS200 FLT - 1000 Hz

TRC INC

TEST NUMBER: 001119-1



ACCELERATION (G x 10^-1)

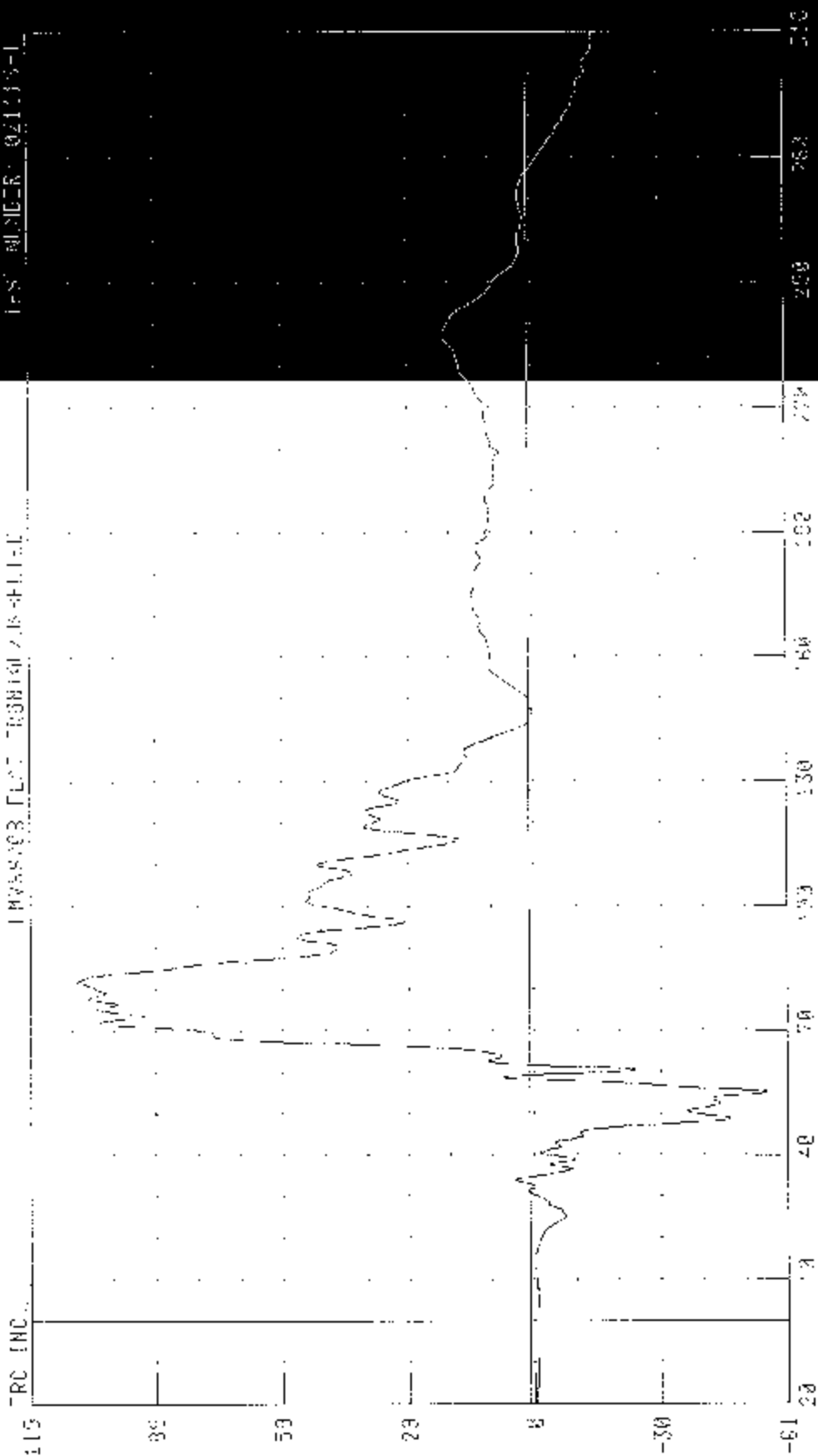
CHANNEL 001001 FILTER OFF CLASS 100 TIME (PS) PFAV 05 4 1 00 0 0 05 75 181 4 04 0 0 80 18 18

030102 - 2007 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER CHES 7-AXIS ACCELERATION

IMVARS03.FLT T03H160718-FL11-C

1-57 NUMBER 021119-1



ACCELERATION (G X 10⁻²)

CHANNEL 051761 FILTER CH. CLIPES 10%

TIME (SEC)

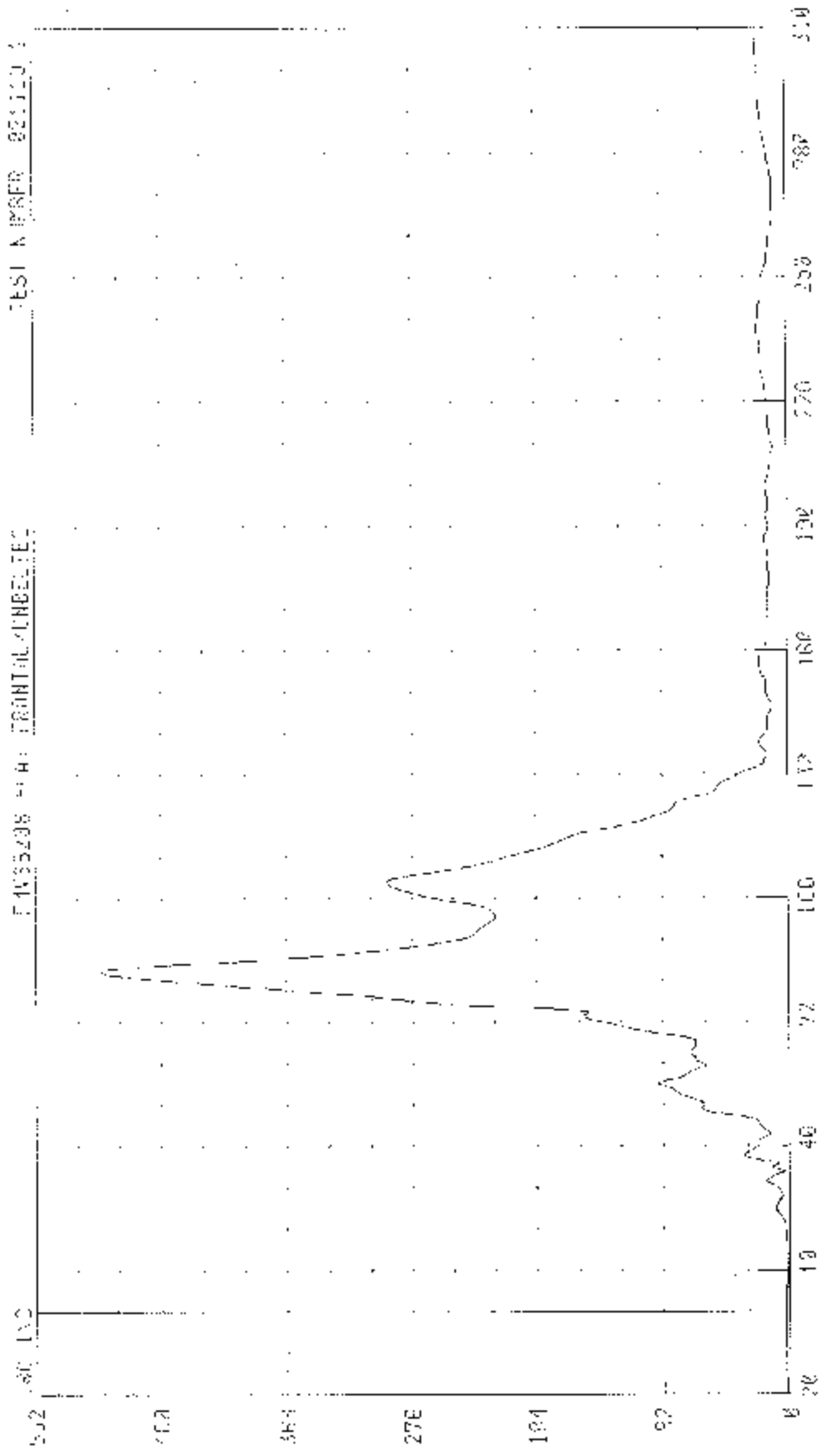
FILE DATA 10 77 6 9 01 02 H5: -5 42 9 9 00 90 YS

030102 / 0025 DESERULET SILVERADO 1504 000 440-148 143

TRUCKER GILBERT RUSO TONT ACCEL FRATION

FW35208 440: FRONTAL/UNBELTED

TEST NUMBER 021119-1



ACCELERATION (G X 10-1)

0-400000 001000 FILTER: 0.5 0.450 100

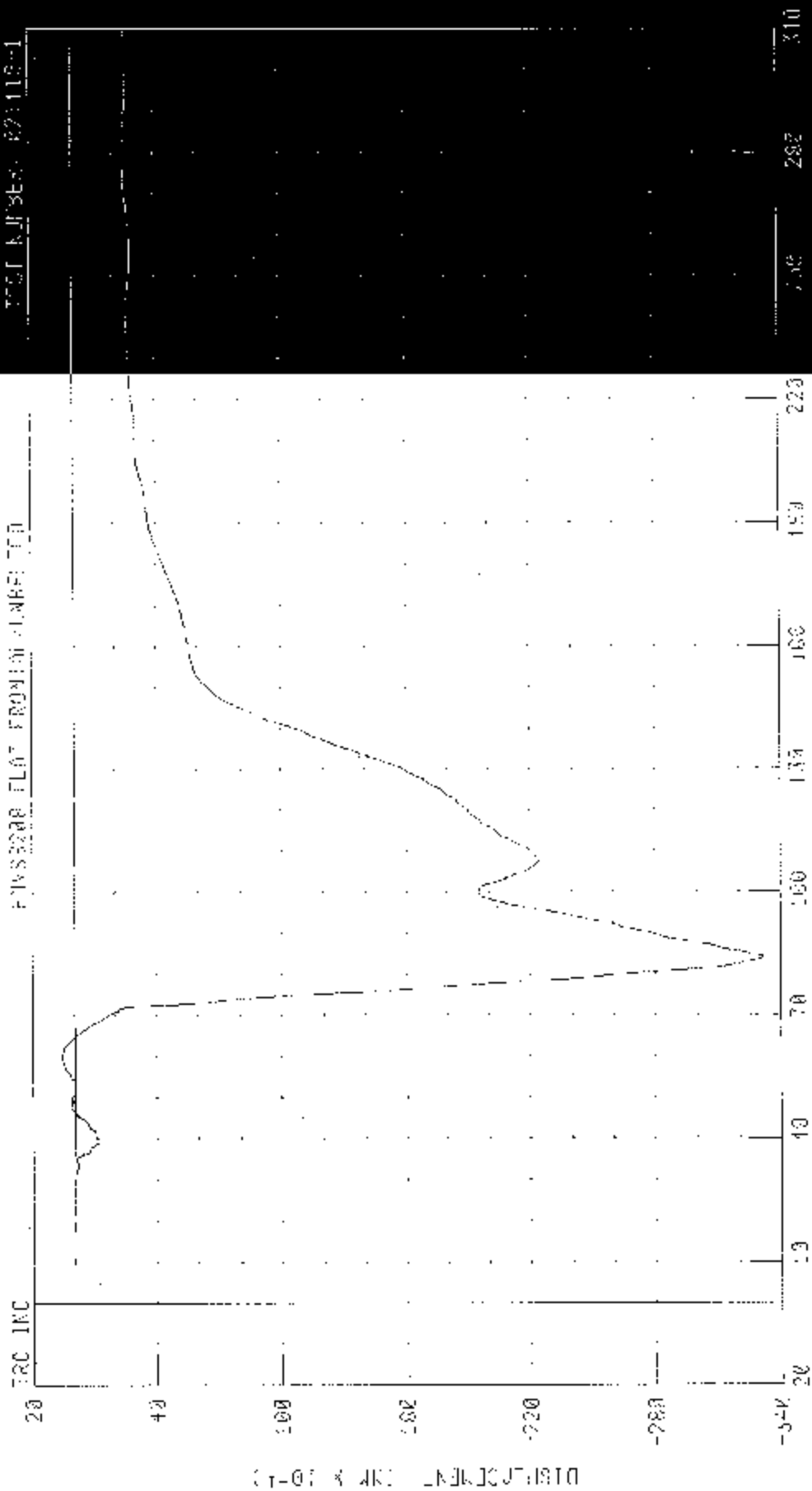
PRIN. TIME: 02.03 0 0 02 02 15. 0.01 0 0 00 00 00 00

030102 - 2003 CHEVROLET SILVERADO 1500 2WT REGULAR CAB

DRIVER SEAT BELT LOCK

PW53200 FLAT FRONT AIR BAG TEST

TEST NUMBER: 021119-1



DISTANCE (IN X 10⁻¹)

0-4000LL - GS1801 FILTER: 311 CLASS: 000

LIFE (MS)

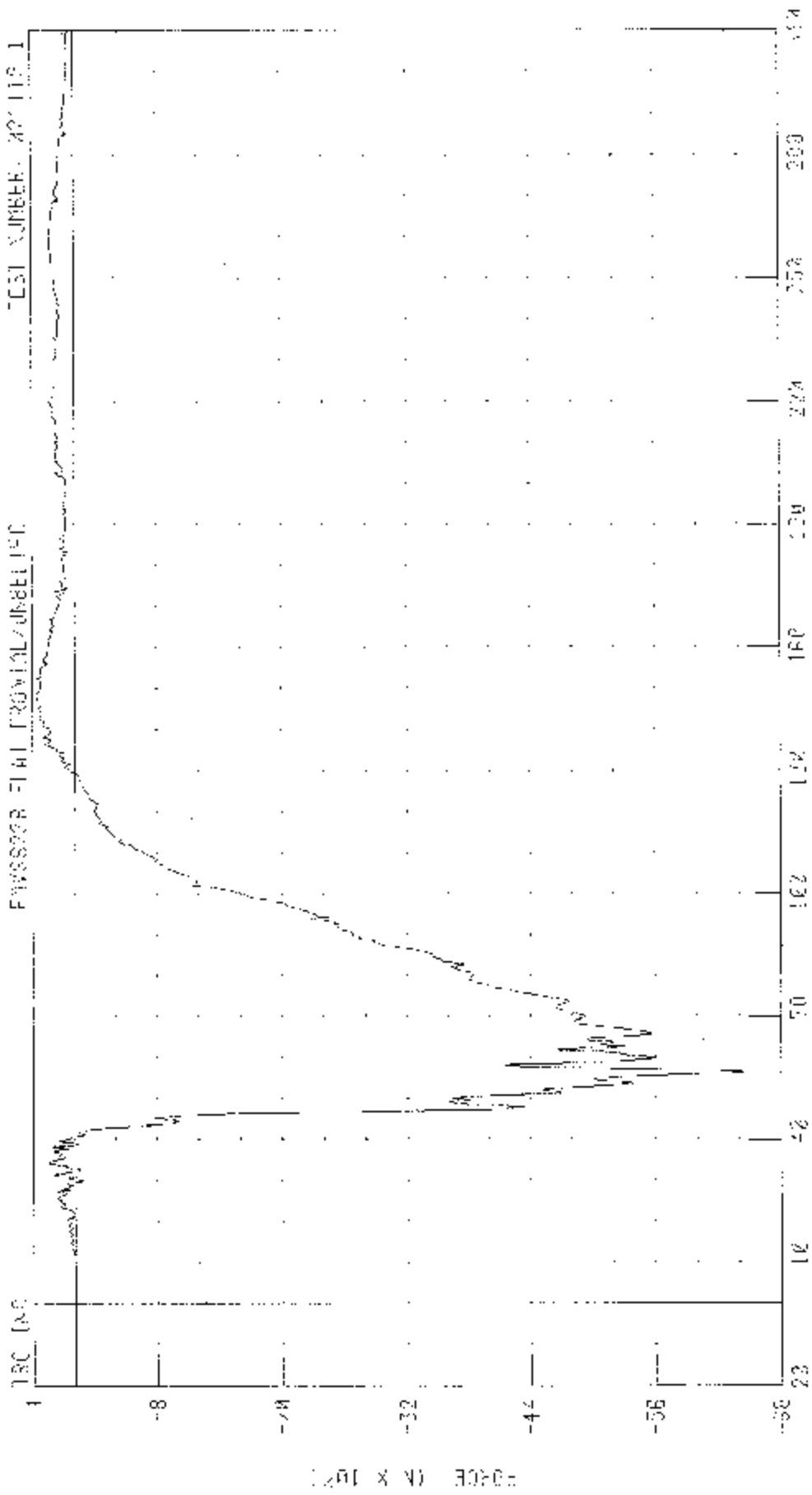
PF46 DA-6 0.53 MI R 60 24 15. 33 17 MI R 34.2 16

C30102 - 2023 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER LEFT FRONT - U302

FWSS928 FWD TROUBLE/SHIELDING

TEST NUMBER: 42119-1



TIME (SEC)

CHANNEL LF07=1 FILTER OFF GLOSS 60%

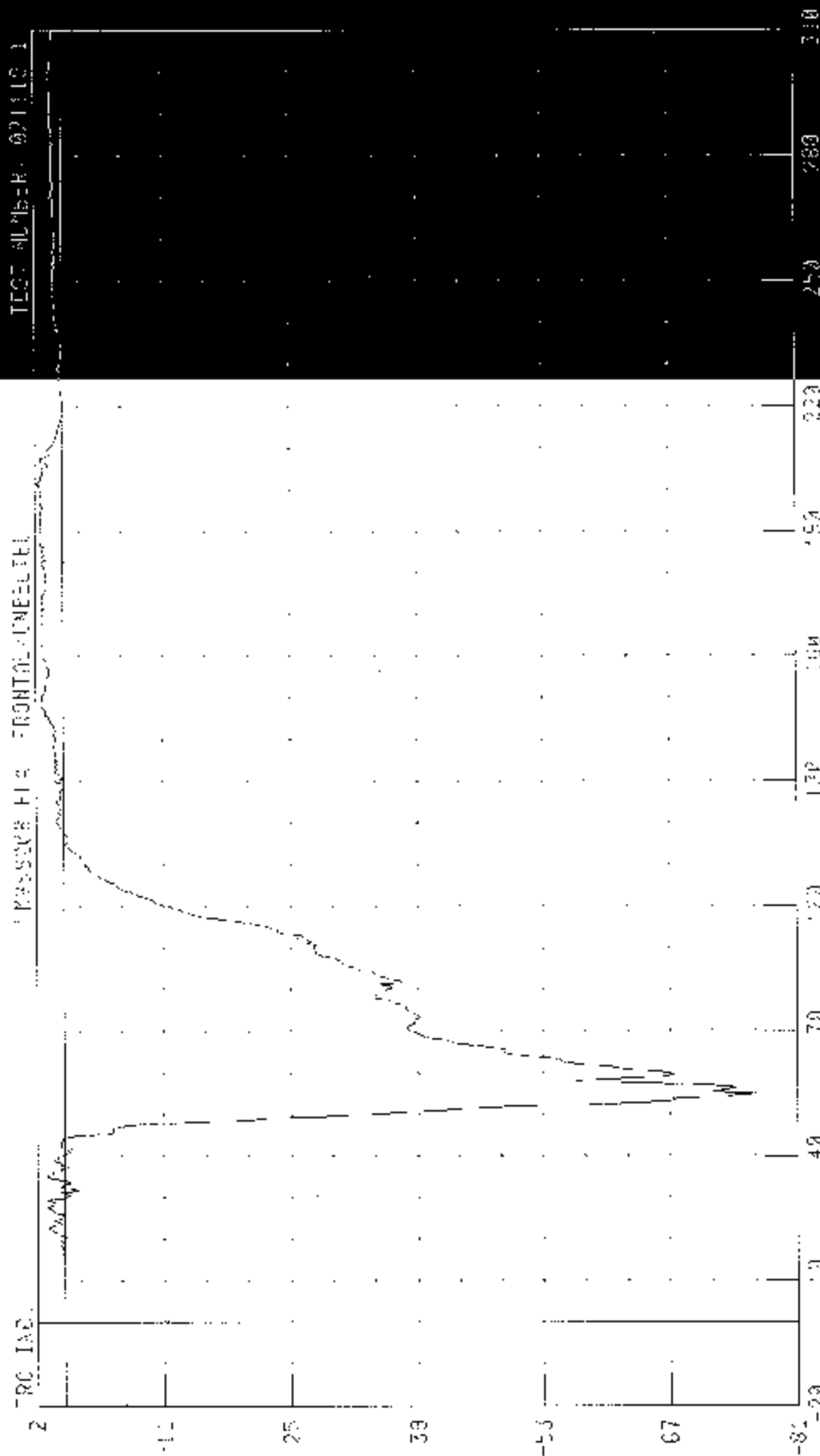
FLAK DATA 354 19 0 3 145 12 MB, 0433 01 A 3 56 48 MS

030102 / 2003 CH-400-1 SILVERADO 1504 PWD R-CULVER 148

OFFICER RICHIE FENDER FORCE

PASSIVE F12 FRONTAL-UNBELTED

TEST #LMB-R- 021119-1



TIME (MS)

PEAK DATA 270.52 N @ 201.00 MS; -7513.24 N @ 35.17 MS

C-400LL 2002F1 FILTER: 0.1 CLIPS 600

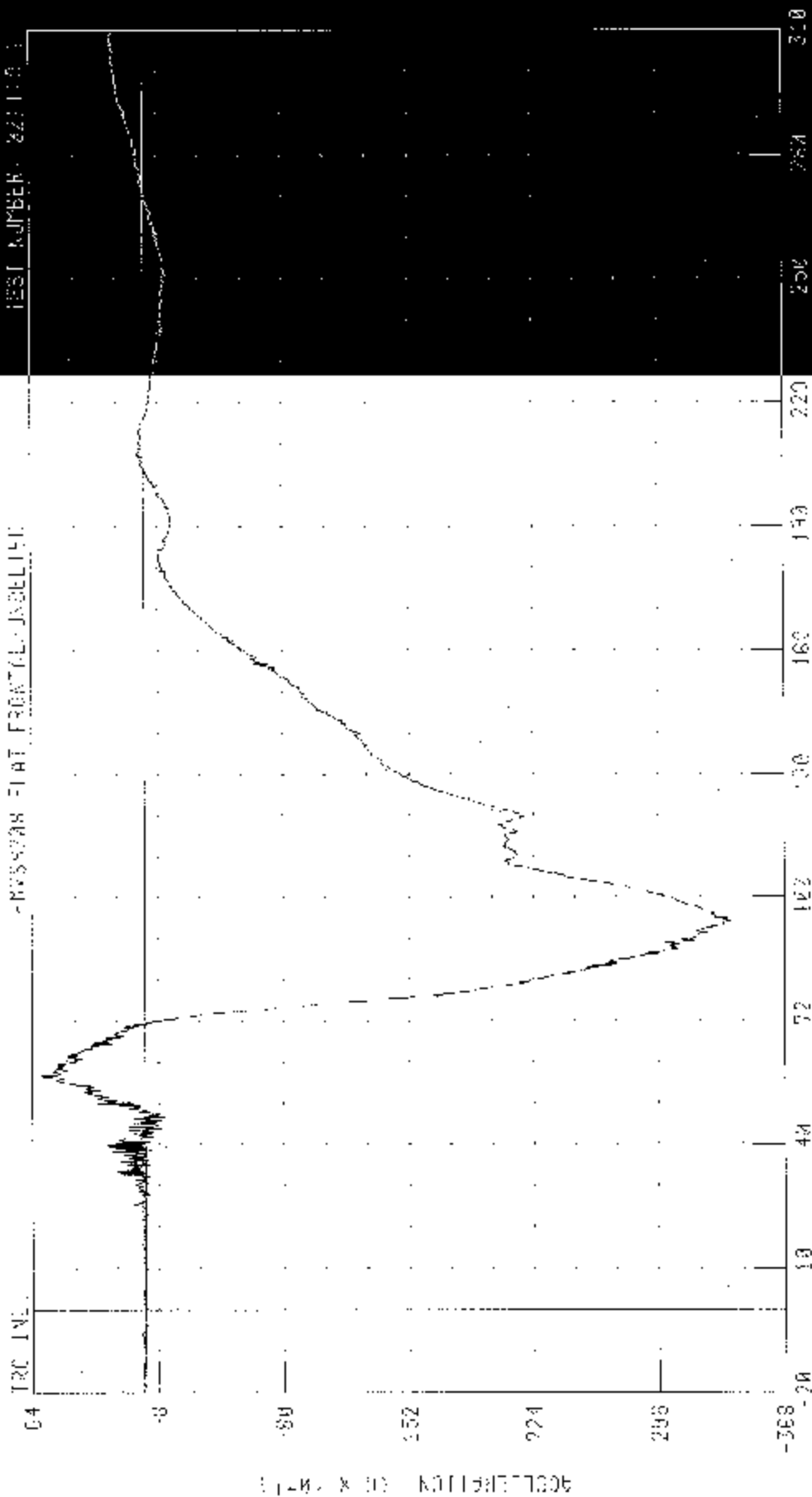
FORCE (N x 10^3)

030140 / 0003 K-FV20.ET SILVERADO 1540 MS0 REGULAR CAB

RIGHT FRONT SUSPENSION - 4-00 X-60.15 ACCELERATION

-RV55708 FLAT FRONTAL CRASH TEST

TEST NUMBER: 223100



ACCELERATION (G X 10^-1)

021119-1

6-24

CHANNEL: ALL X02 FILTER: CH. CLENS 1000

TIME

MS

030140 / 0003 K-FV20.ET SILVERADO 1540 MS0 REGULAR CAB

RIGHT FRONT SUSPENSION - 4-00 X-60.15 ACCELERATION

-RV55708 FLAT FRONTAL CRASH TEST

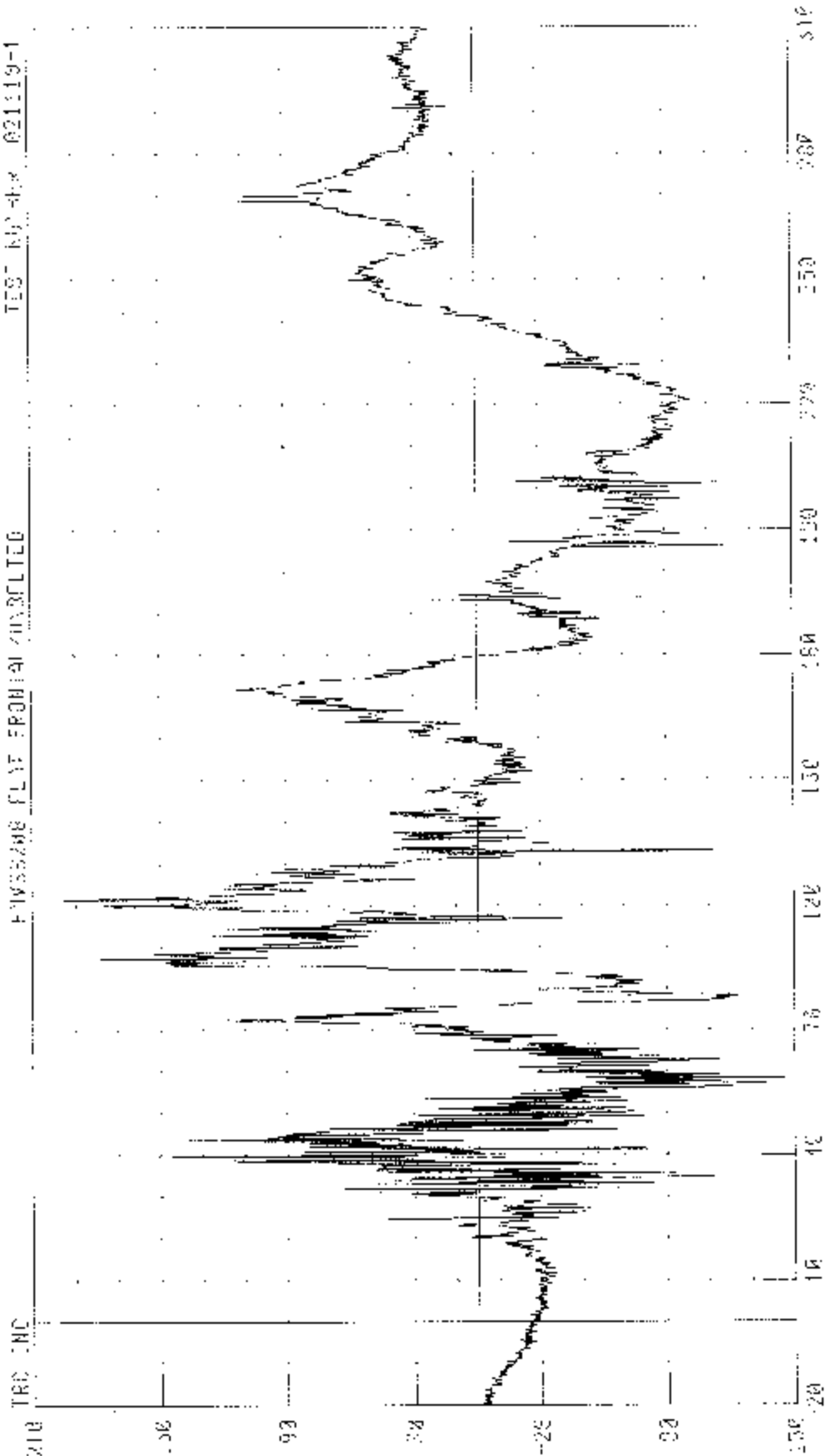
TEST NUMBER: 223100

030102 - 2000 CHEVROLET SILVERADO 1500 - WE KILMER ONE

RIGID FRONT BUSH-NGER HERS Y-H XIS ACCELERATION

FMVSS/08 CLAY FRONTAL CRASH TEST

TEST NO: 021119-1



CHANNEL: FTY62 FILTER: CH 3168 1020

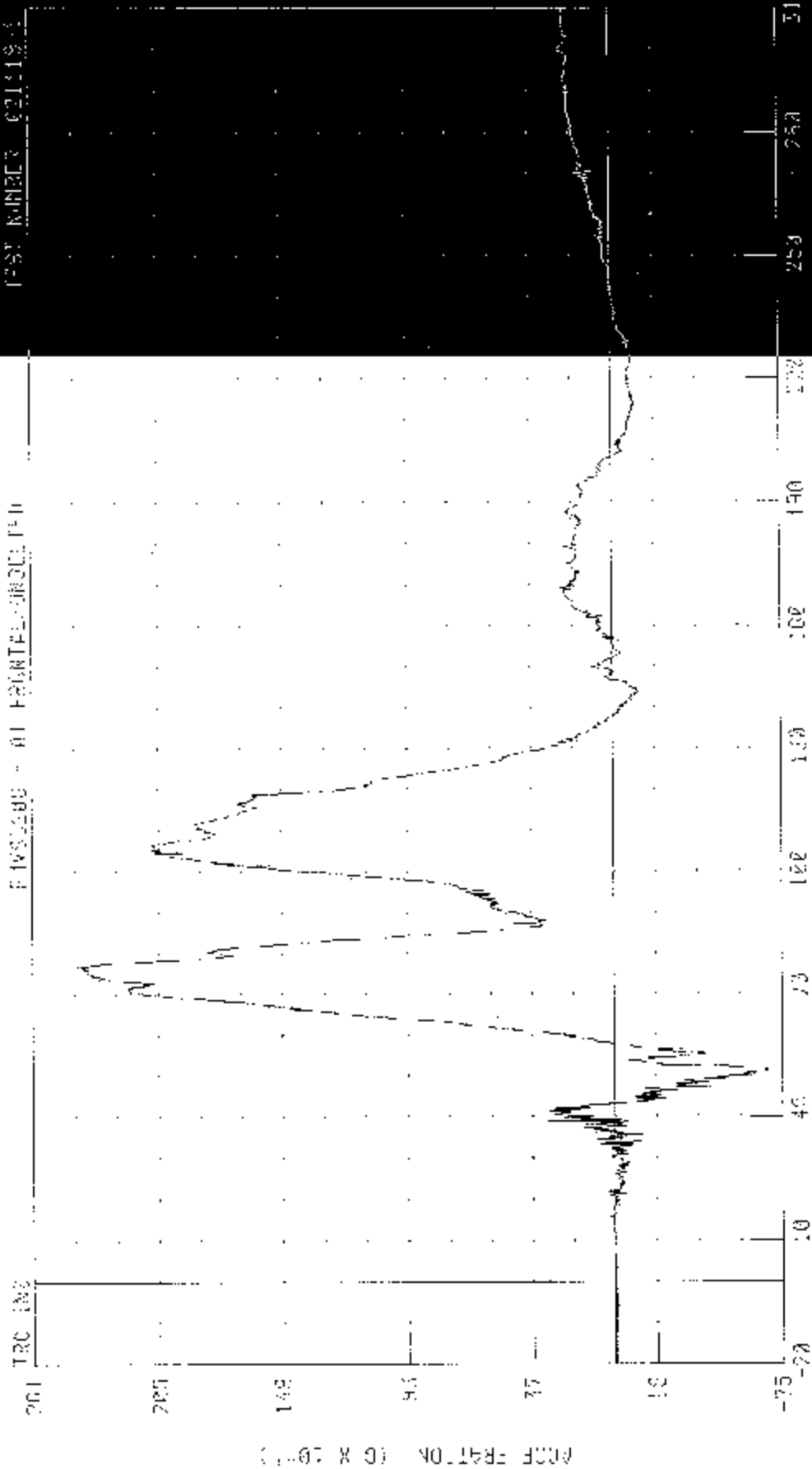
TIME (MS) P-AX DATA 1.55 G @ 191.68 MS -0.45 G @ 253.40 MS

030100 / ANAL. CHANNEL - SAVVARD: 1500 2ND. REGULAR CMB

RICH FRONT PASSENGER - RAD 7-0X-3 - ACCELERATION

FIVE SECS - 01 FRONTAL CHANNEL

POST NUMBER 021119-1



CHANNEL - 10000 FRONT CH. CLASS 1000

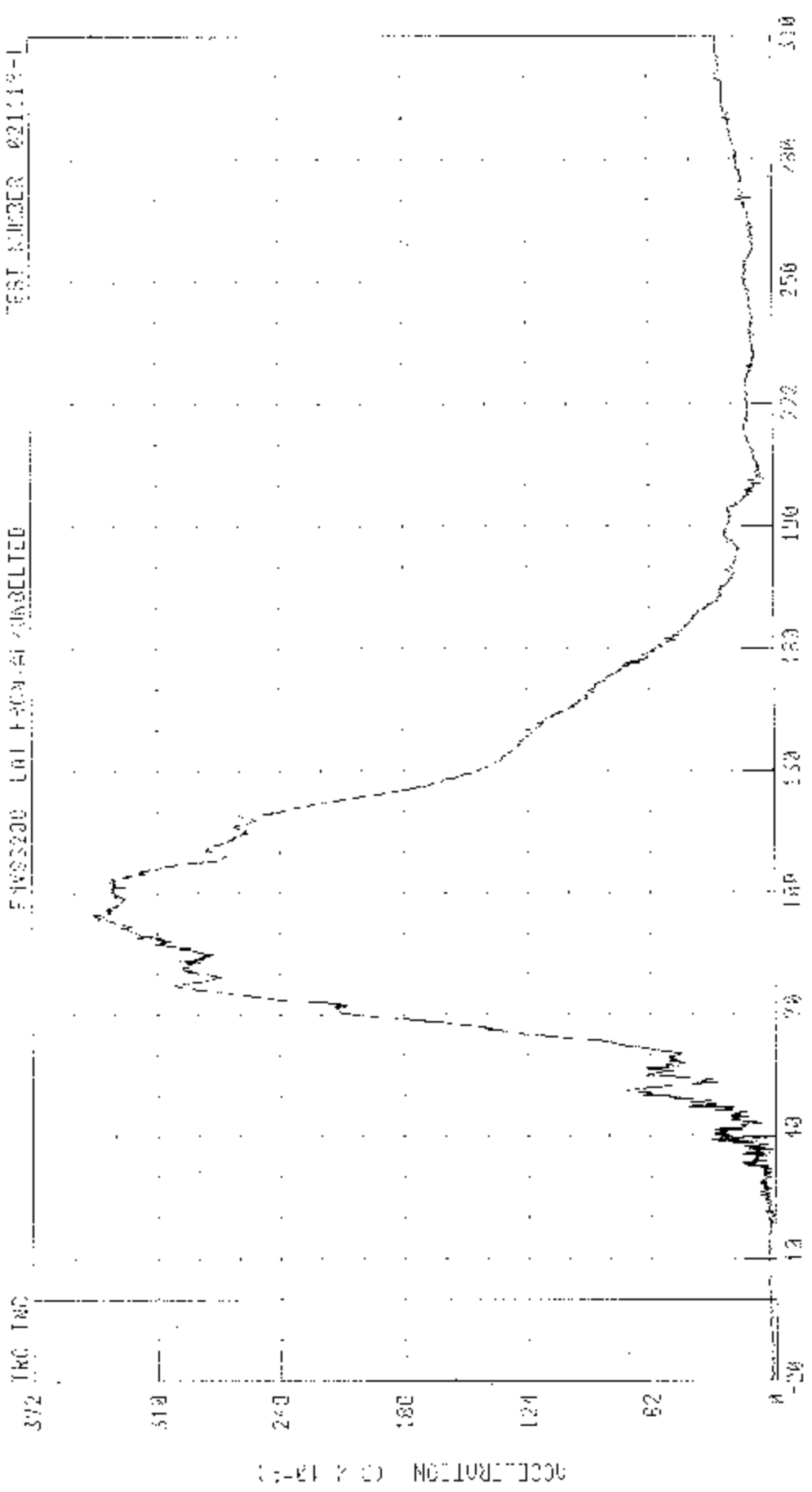
TIME DATE: 14 14 2 3 73 00 MS, 0.00 0.0 53.44 MS

C30132 - 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

RIGID FRONT SUSPENSION HF40 RESOL1007 ACCELERATION

FW03200 L01 FROM 40 UNLABELED

TEST NUMBER 021119-1



CHANNEL - HFTR02 FILTER - CH. CLOSE (0.20)

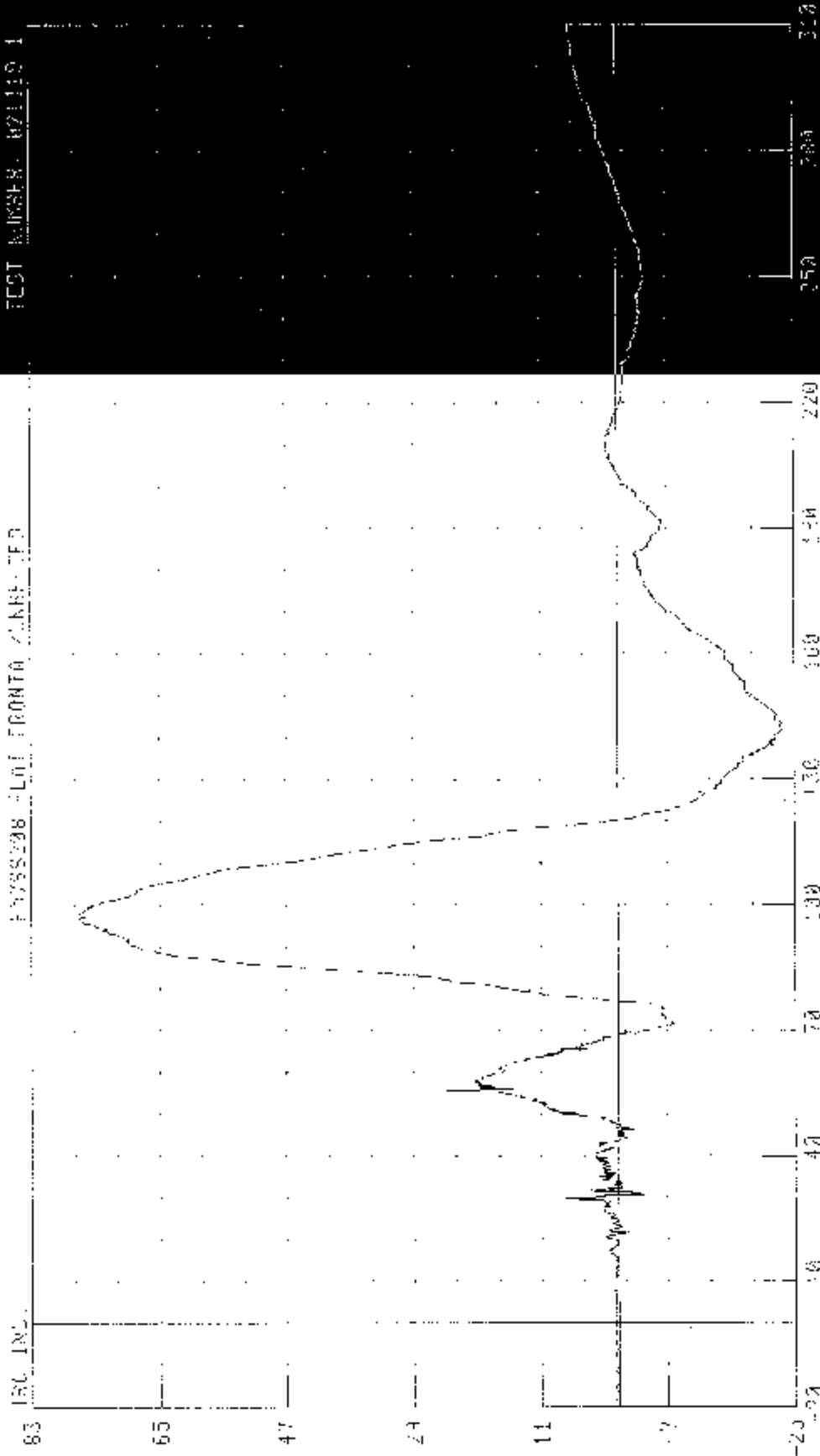
PIK DAT 34.16 G 04 02 05.027 0 0 30 77 PS

08/10/2023 CHEVROLET SILVERADO 1500 2WD REGULAR CAR

RIGHT FRONT HISS-KOPE STEER & AXIS SHEAR FORCE

FS755298 FLAT FRONTAL CALIBRATED

TEST NUMBER: 021119-1



TIME (ms)

CHANNEL: NFK4F2 LTR: CH: C035 1620

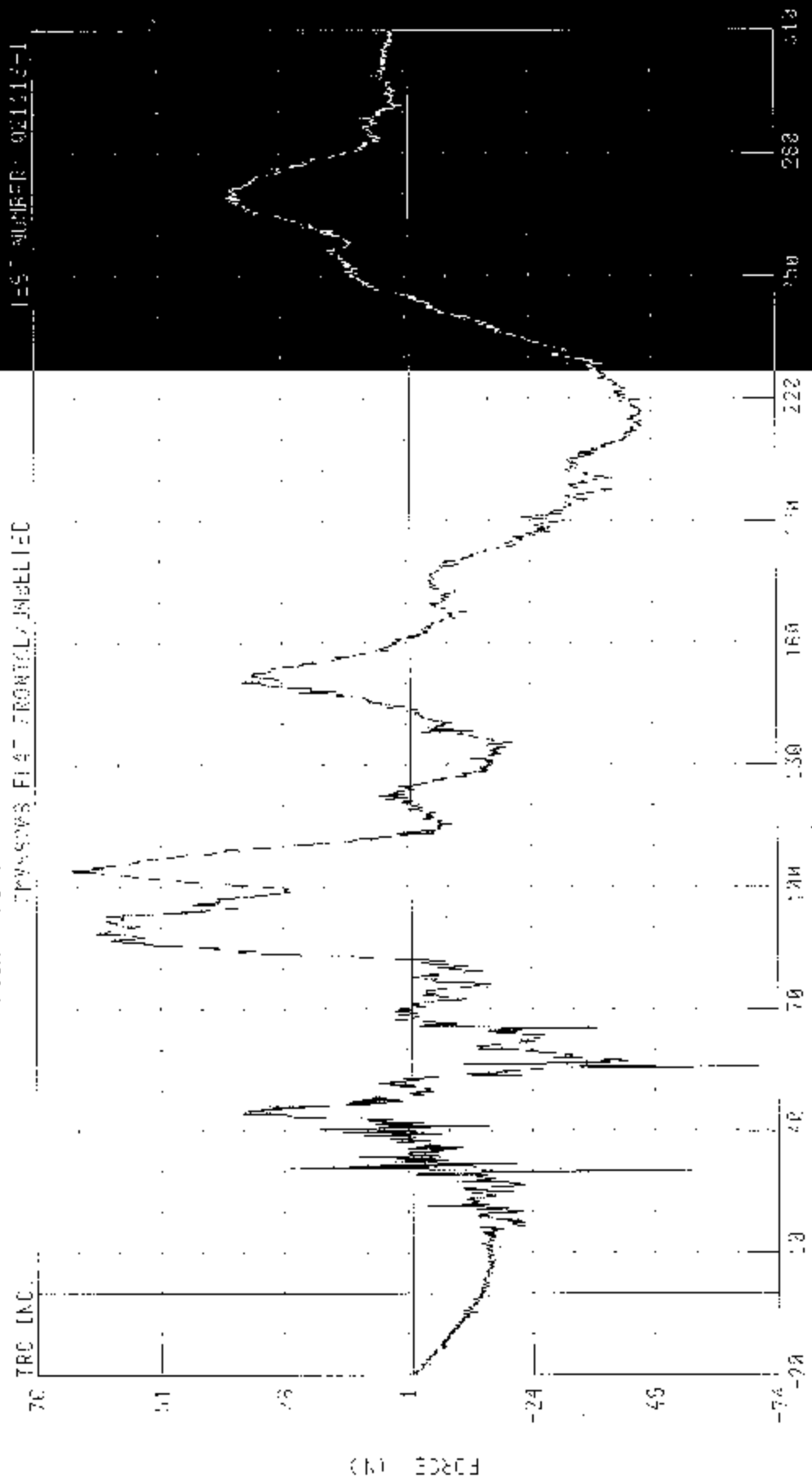
PFAR: 01A: 763.00 N @ 97.04 MS, -230.70 N @ 147.16 MS

C30102 / 200X CHEVROLET S (W/40.00 2000 2WD REGULAR CDR)

RIGHT FRONT CROSS-MEMBER NICK 2 INCHES FORCE

CPVASSVS F147 FRONTAL UNBELLED

TEST NUMBER: 001212-1

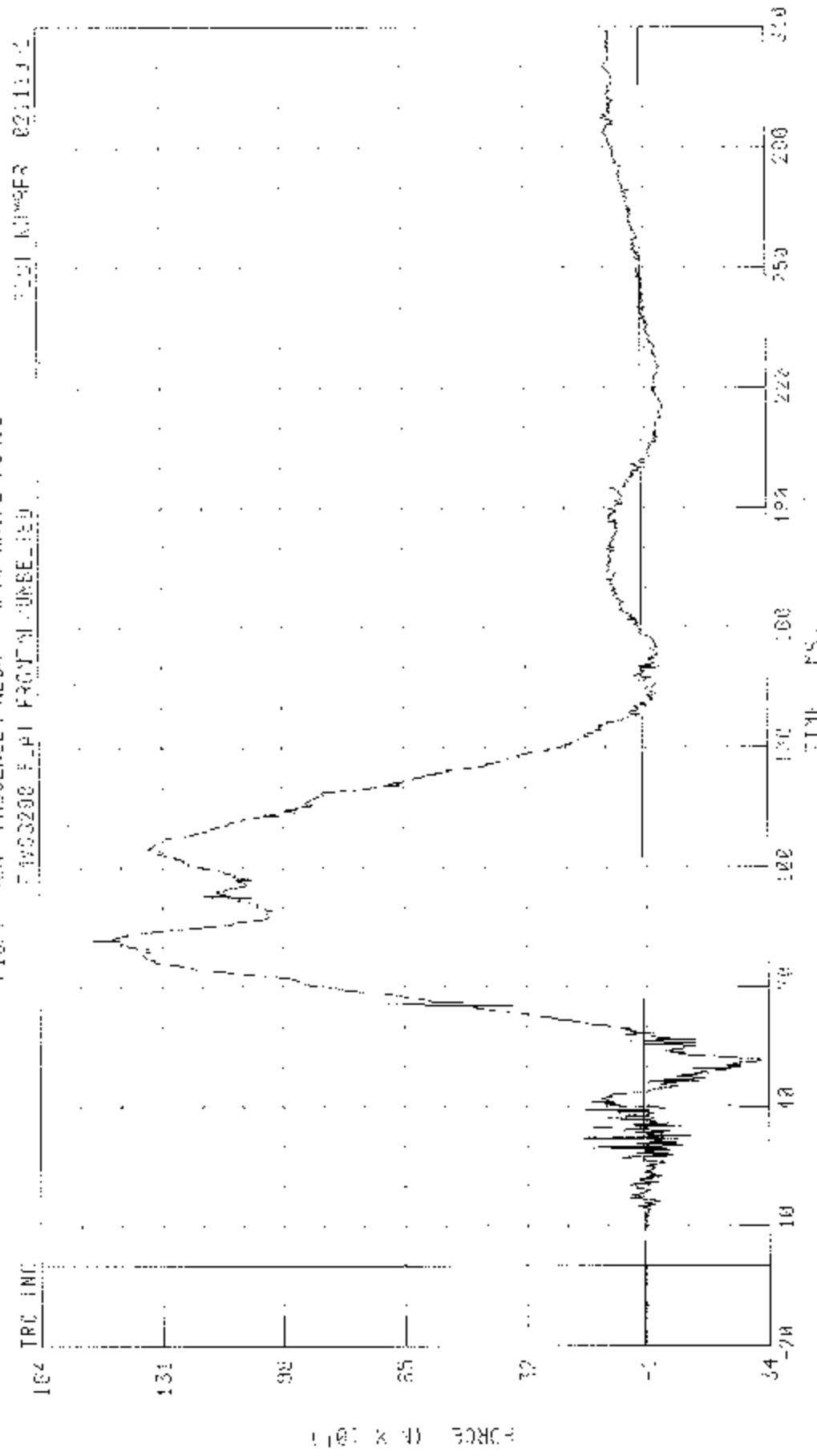


SUPPLEMENTAL VERIFIED 11 IER CIL CLASS 1000

PEAK DATA 68.42 V X 134.10 MS -70.23 N W 55.92 N3

030107 / 2023 CREWNET ST/VFAC/01002 2ND REGULAR CAR

PILOT FROM PASSENGER NECK / -9818 AXIAL FORCE



PEAK L&P: 1400 40 N 0 81 7F MS. 519 92 X 3 5' 38 00

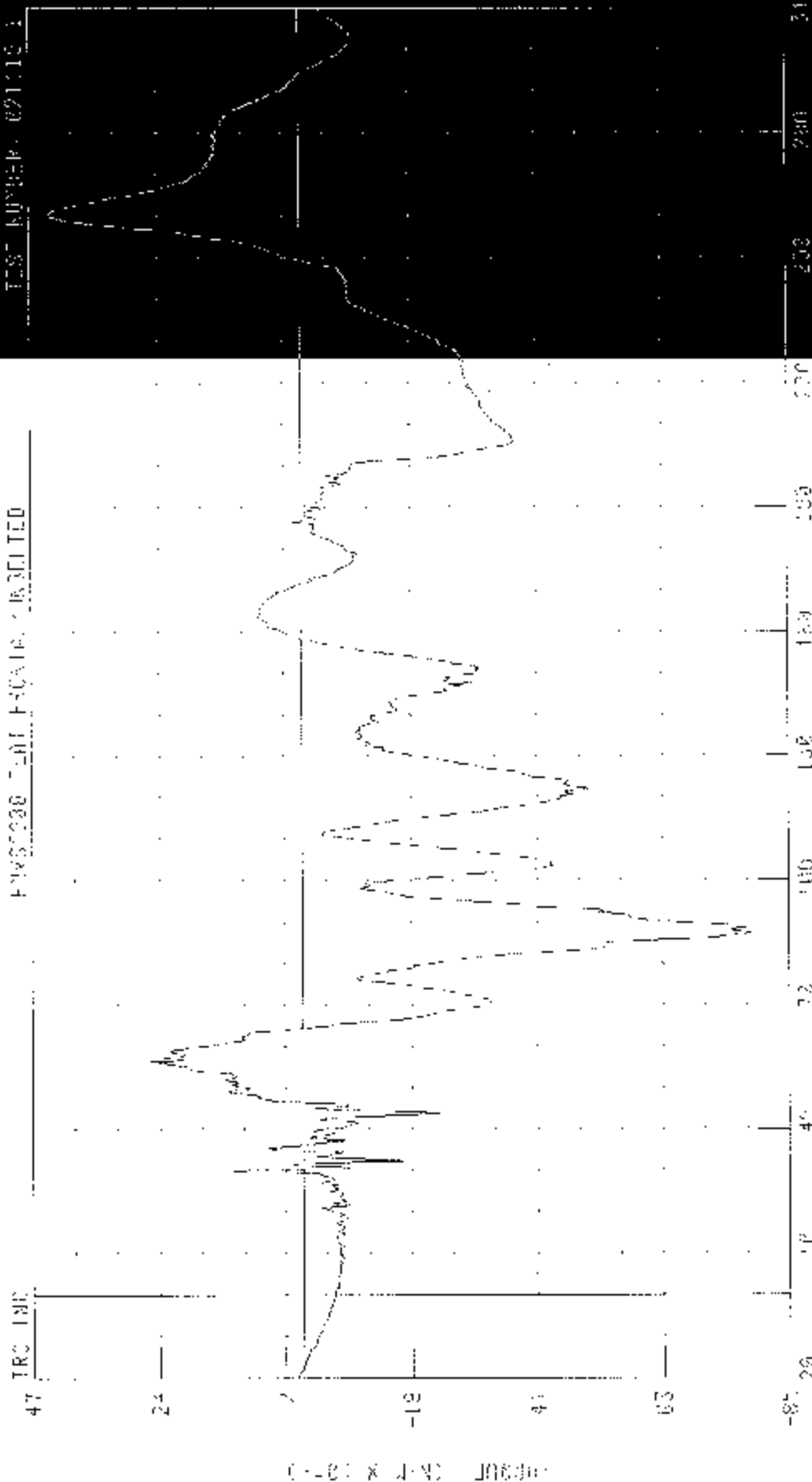
CHANNEL: ALZ2 FILTER: CH CLASS 1202

030102 / 2003 CHRYSLER SILVERADO 4500 3MI. HELLER 1700

RIGHT FRONT WHEEL BEARING ASSEMBLY & BOLT

PNV5200 LEFT FRONT WHEEL

TEST NUMBER: 021119-1



CHANNEL: A-K802

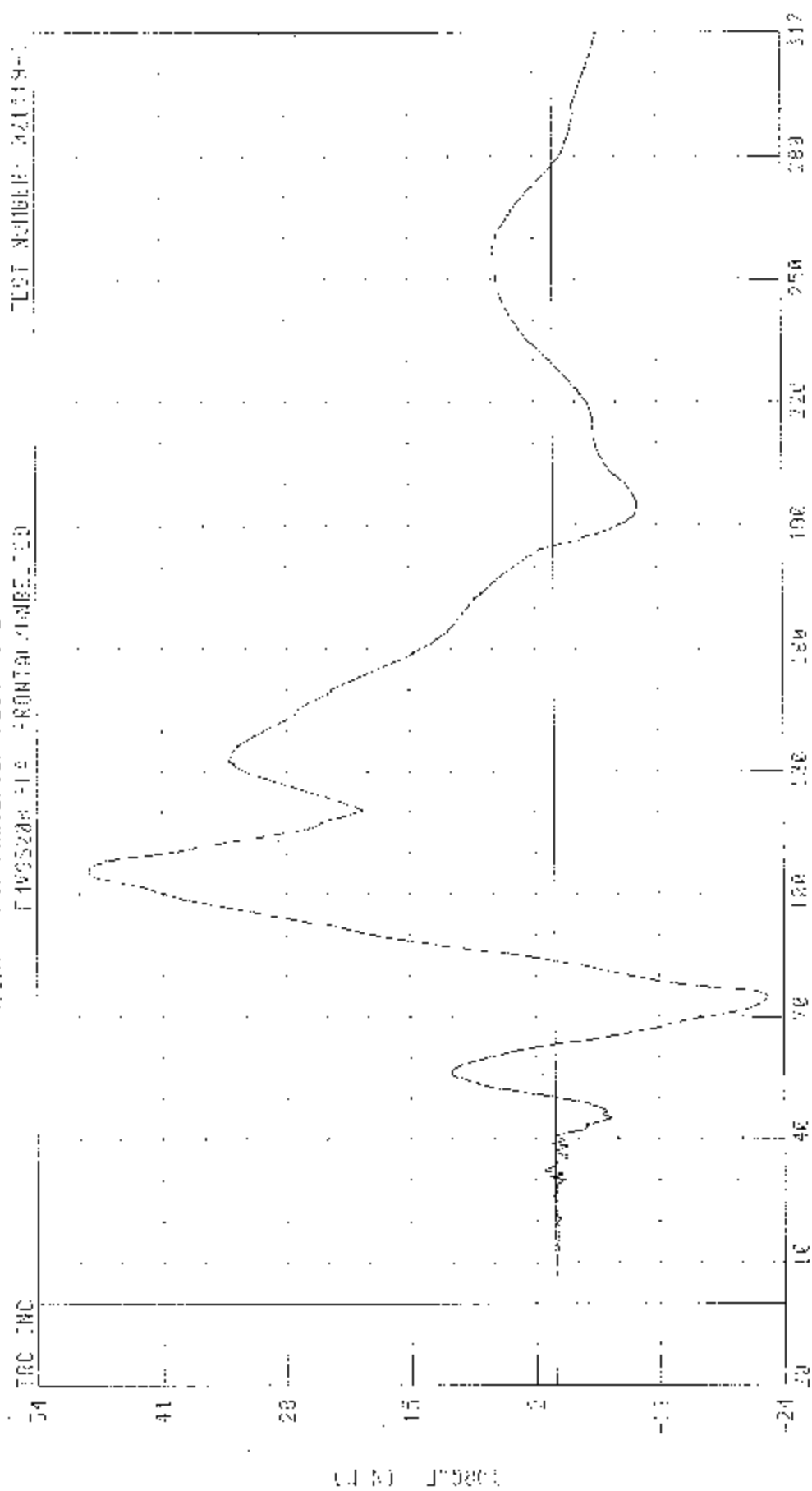
FILTER: CH. 0.005 HZ

TIME (SEC)

030102 / 2003 CHRYSLER SILVERADO 4500 3MI. HELLER 1700

CHILDREN OF THE NEW FUTURE - 1983

145528 = 12 + R010101011111

[illegible]

CHENG = 214712, LEE = 1438 149

Peak 14:4 43.76 4 1 8 95 14 16 -22 33 4 11 12 04 02

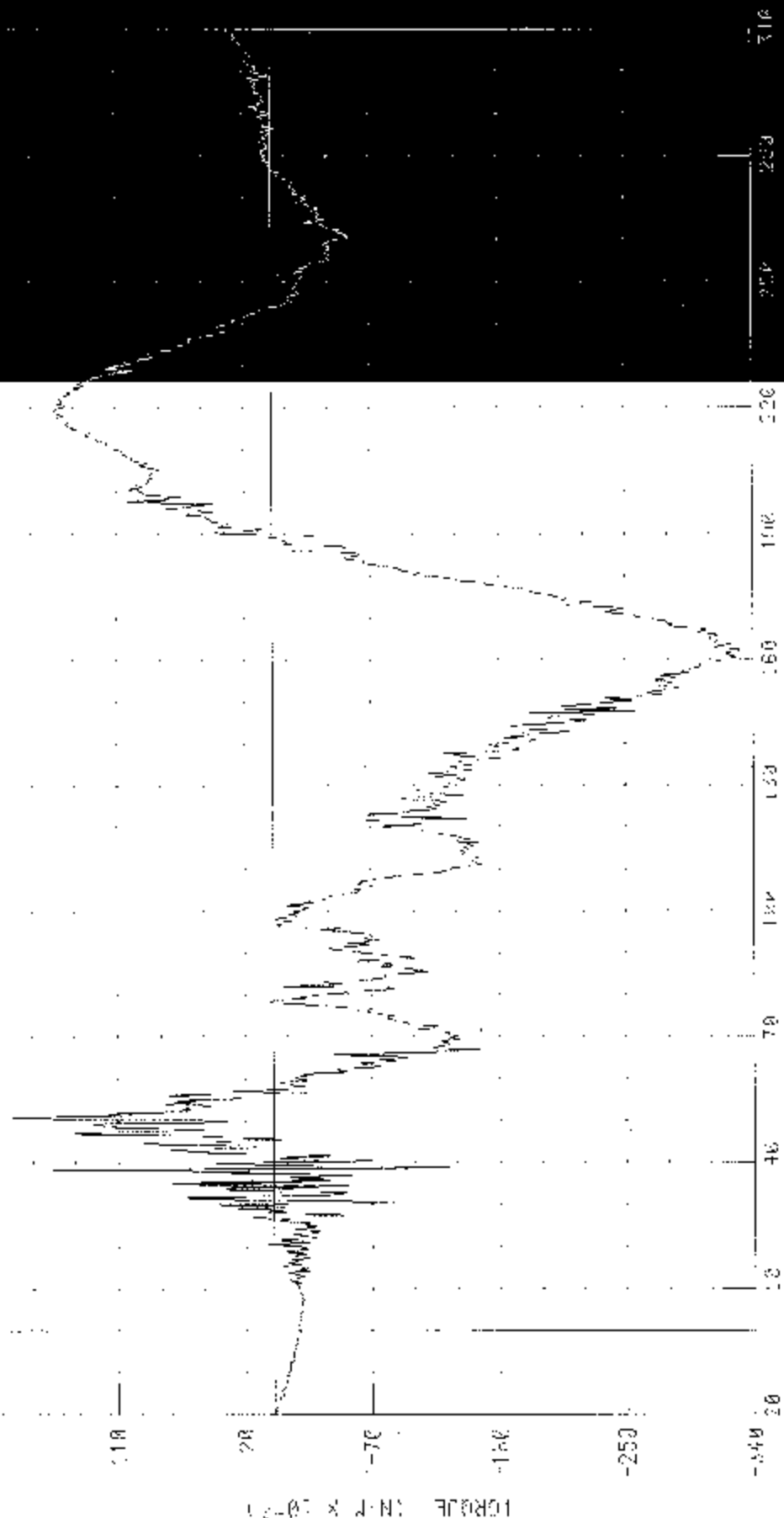
COM142 - 2003 C. CYCLOCET SILVERADO 1400 2ND REGULAR CON

RICH FRONT PHOSPHOR VERY NOISEY BRILLIANT Z AXIS

PHOSPHOR F. OF FRONTAL/UNDERL. PH

TRC INC.

1ST MONITOR 220100 1



CHANNEL: NE477

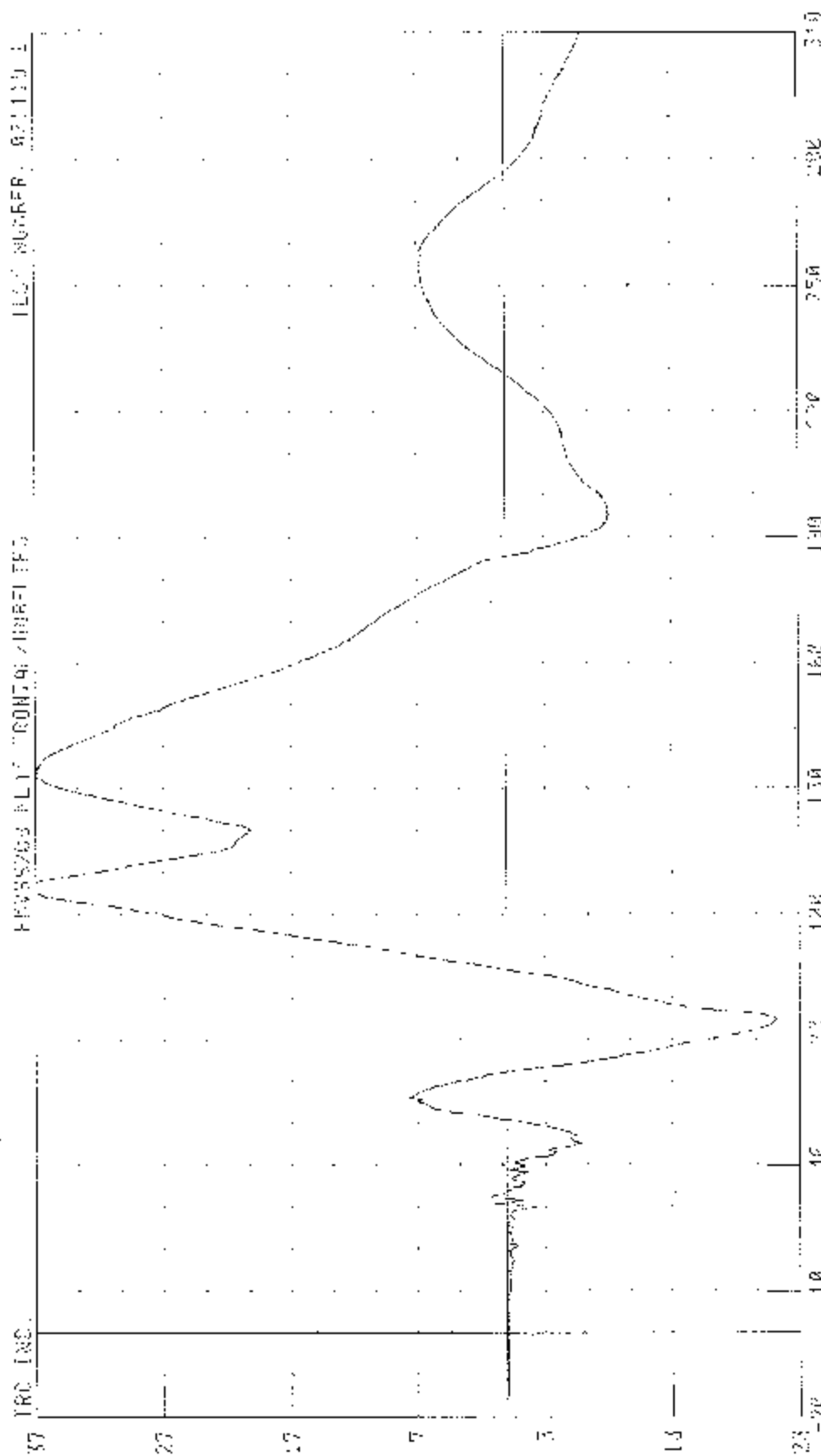
1-1778: 04 C.F. 000

TIME MS

PEAK DATA 1.06 4.18 5.18 11.18

1.06 3.21 4.18 11.18 14.18

030102 / 2003 CHEVROLET SILVERADO 1500 2V1 REGULAR CAB
 RIGHT FRONT PASSENGER NECK HICHERT POLYETHYLENE FORDABLE ABOUT Y AXIS
 PEVSSZG3 BLT / CONTINENTAL TFS



CHANNEL KNOWN FILTER ON GAIN 800

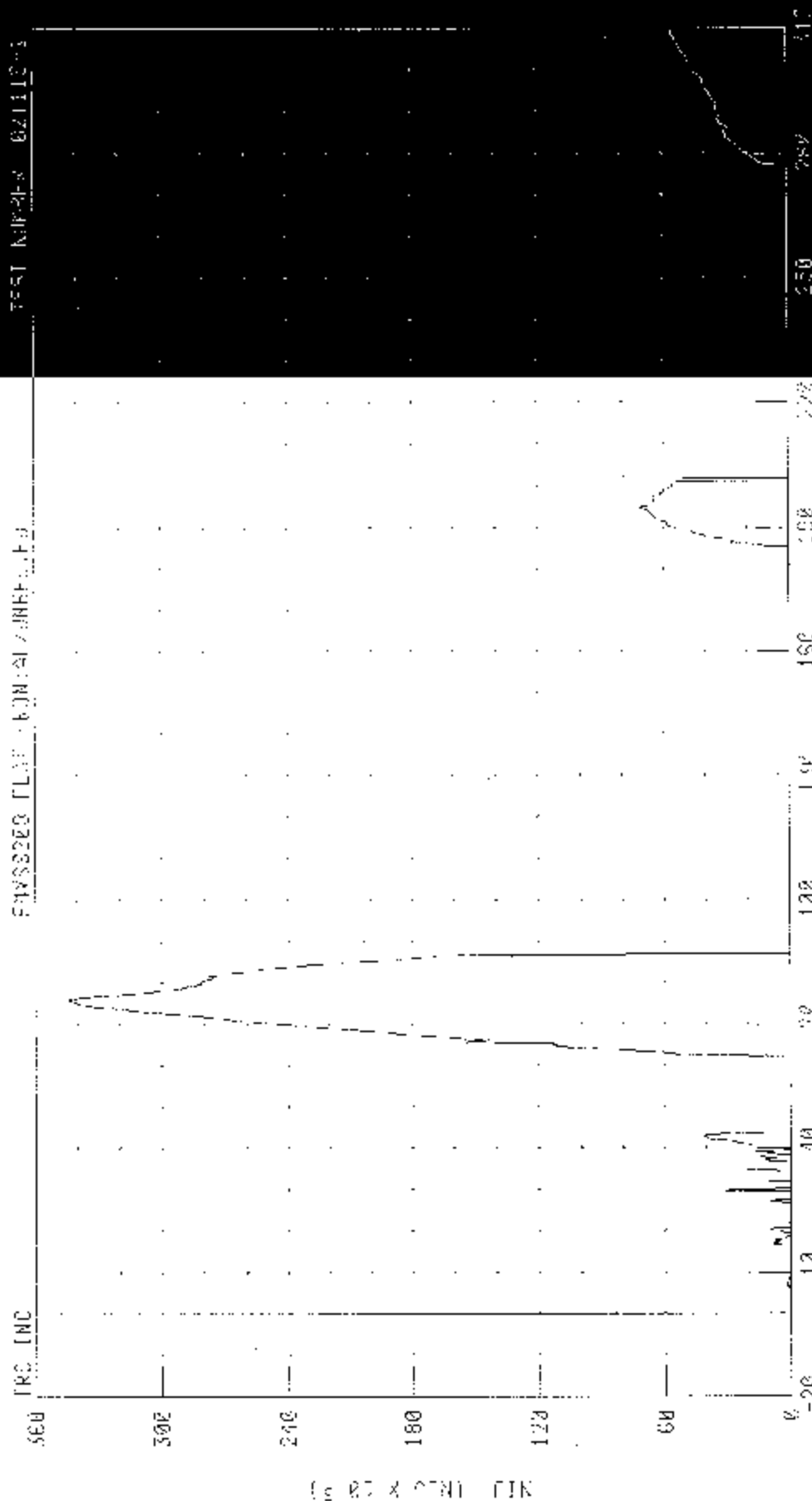
PEAK DATA 37.58 N F 6 100.40 MS 21.18 N F 8 215.00 MS

030100 / 8000 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

FIELD FRONT PASSENGER SIDE WINDOW EXTENSION

SVSS0200 FLAT - BONAI/AMERICA

TEST NUMBER 021119-1



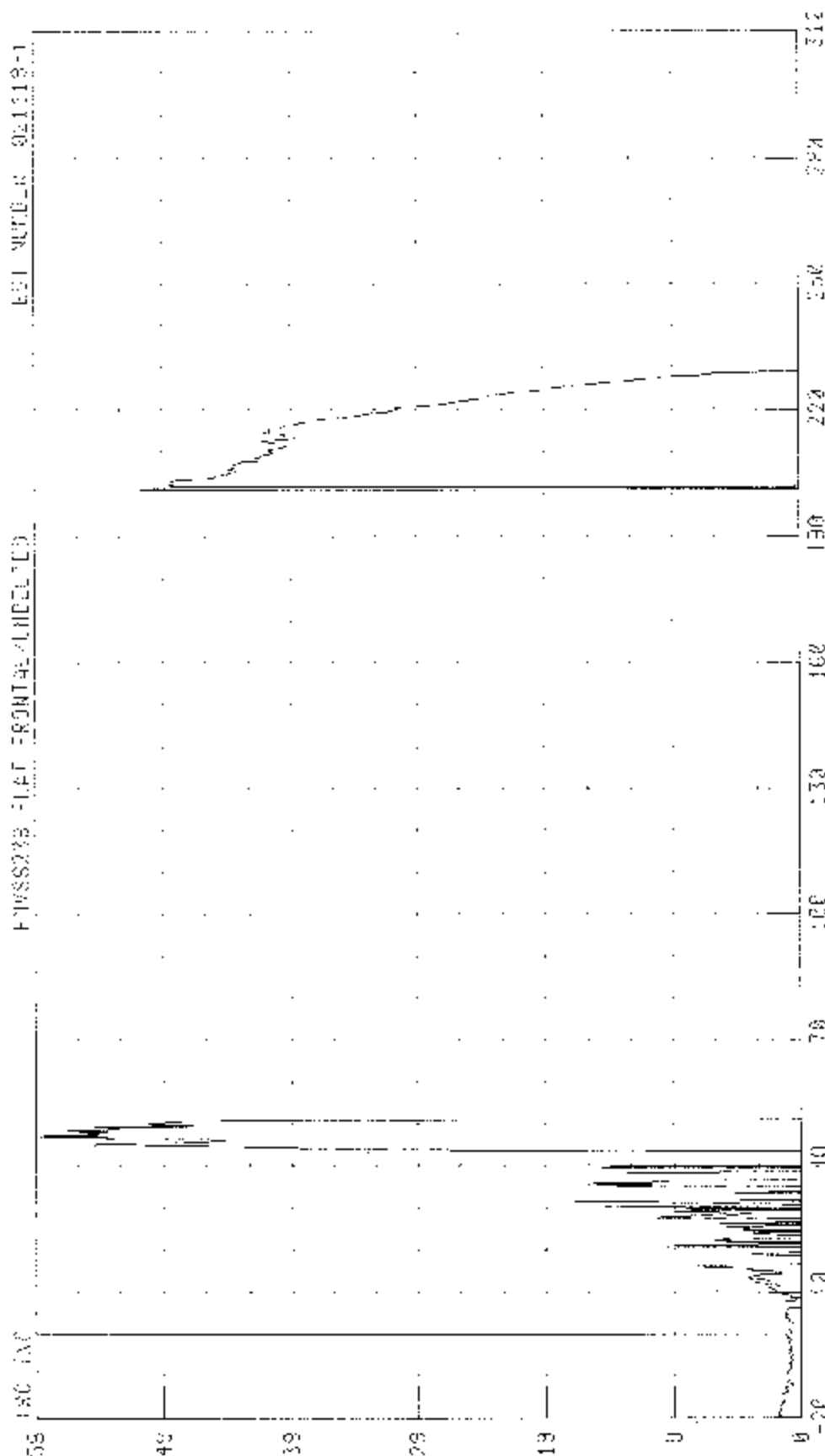
CHANNEL: K1C2 FILTER: CH 0.558 5000 +4.00 0.14 0.34 N10 0.76 1.6 15.0 0.03 N1.2 20.00 N5

030102 / 0001 CHEVRON FL SHV-PHID 1000 2ND RECORD FOR

RICH1 FROM 1-PSURFILL NLO COMPRESSION FEATURES FOR

FWSS2733 FLAT FRONTAL UNDEVELOP

EST NUMBER 001119-1



TIME (SEC)

CHANNEL: NC12 FILTER: CH. CLASS FOR

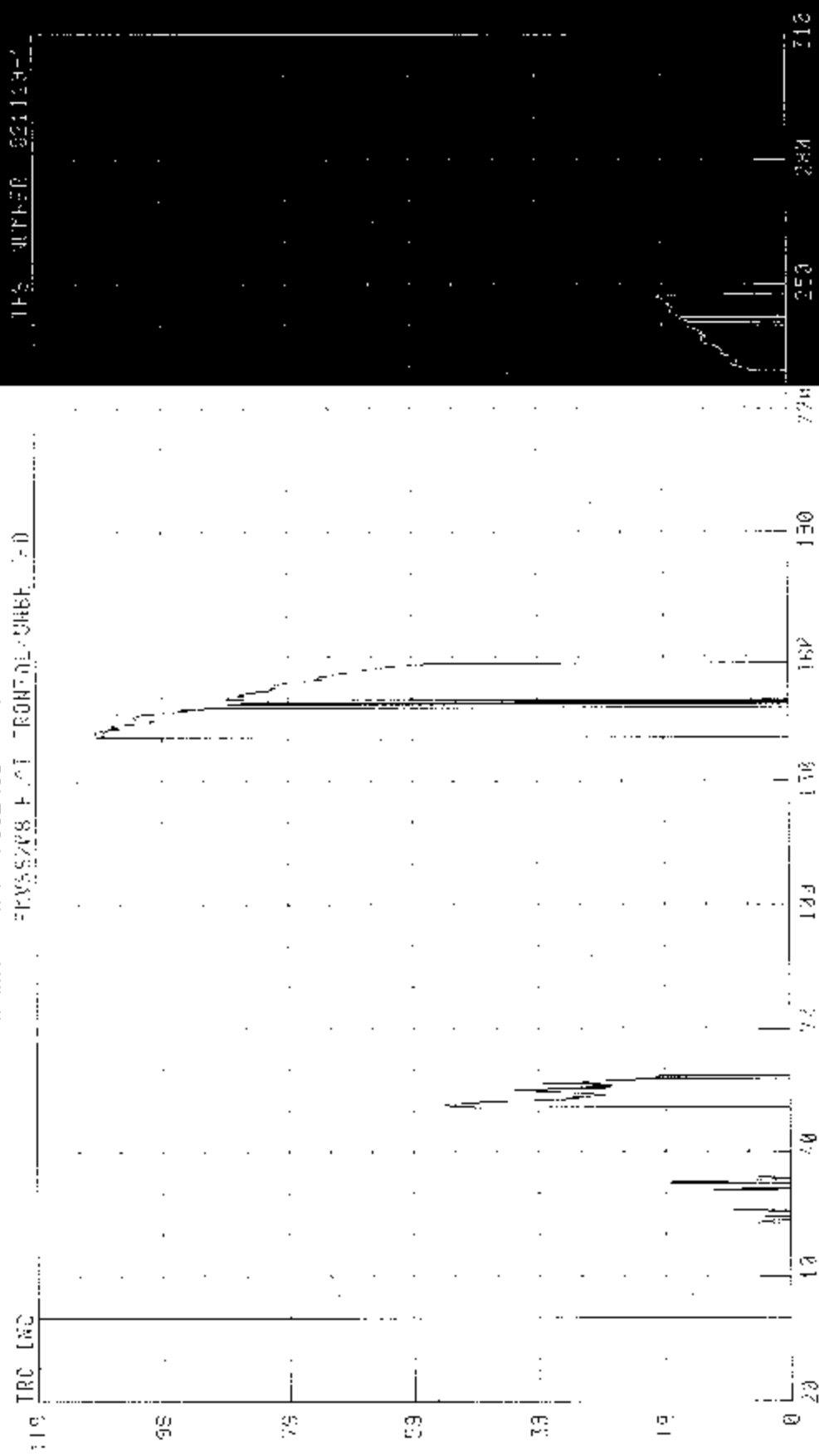
PLK DATA 0 00 N1 3 47.20 45, 4 42 N1 0 0 40 115

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REG. AR CAN

RICHIE - RONI PASSENGER SEAT COMPRESSION/FLEXION

PHYSS2V8 FLOT CONTROL-CHBE 1-D

IFS BUFFER 021119-1



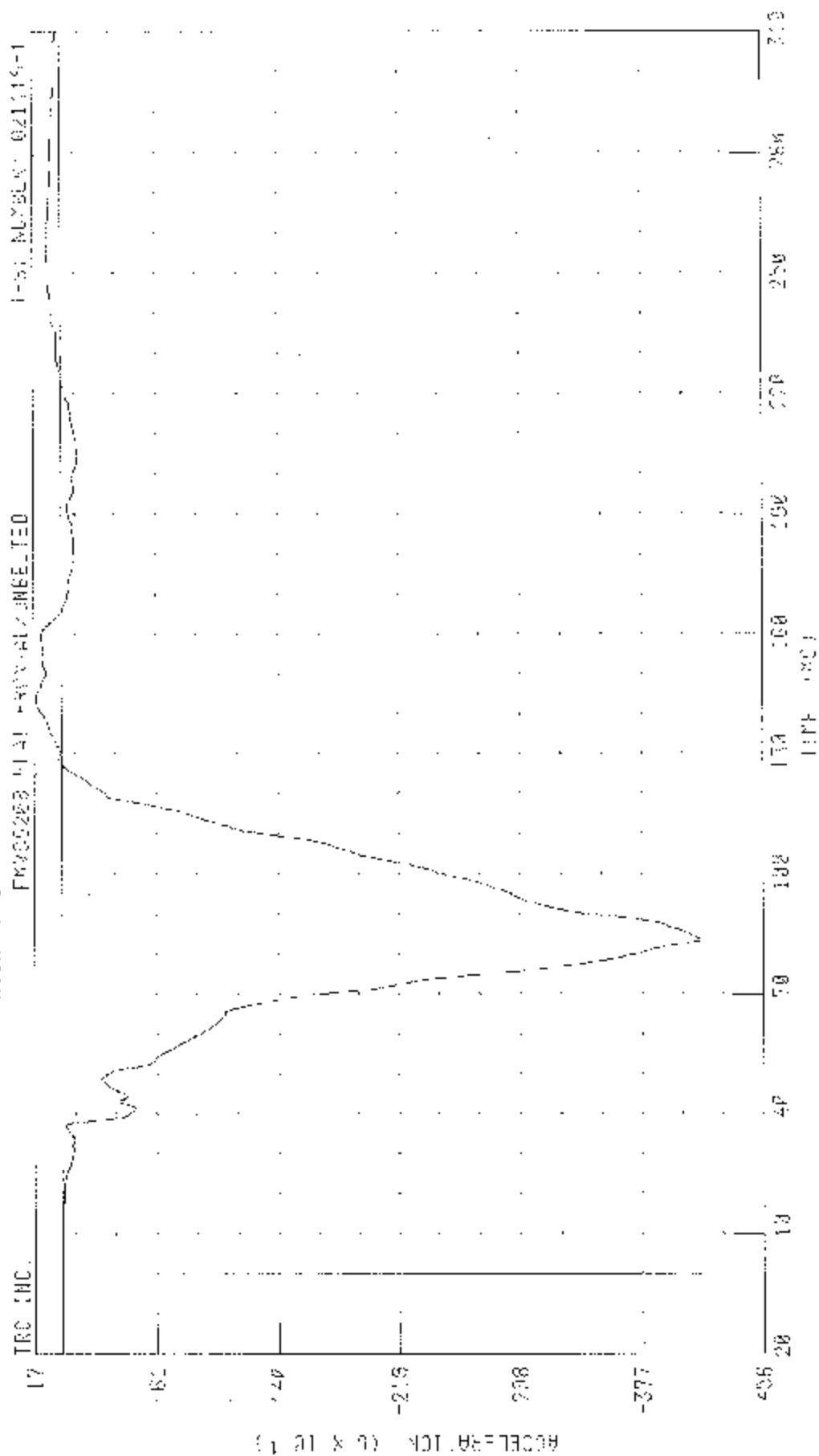
10.00 X 110 718

CHANNEL 0012 FILTER C CLASS 000 TIME 1000
 PFAK DATA 0 11 N1 0 142.58 FS, 0.40 V10 N -24 00 FS

1993-2003 CHEVROLET 3.0 V6 100 2WD REGULAR COE

HIGH-LEVEL PROJECT PERFORMANCE RATING: A-EXCELLENT COLLECTION

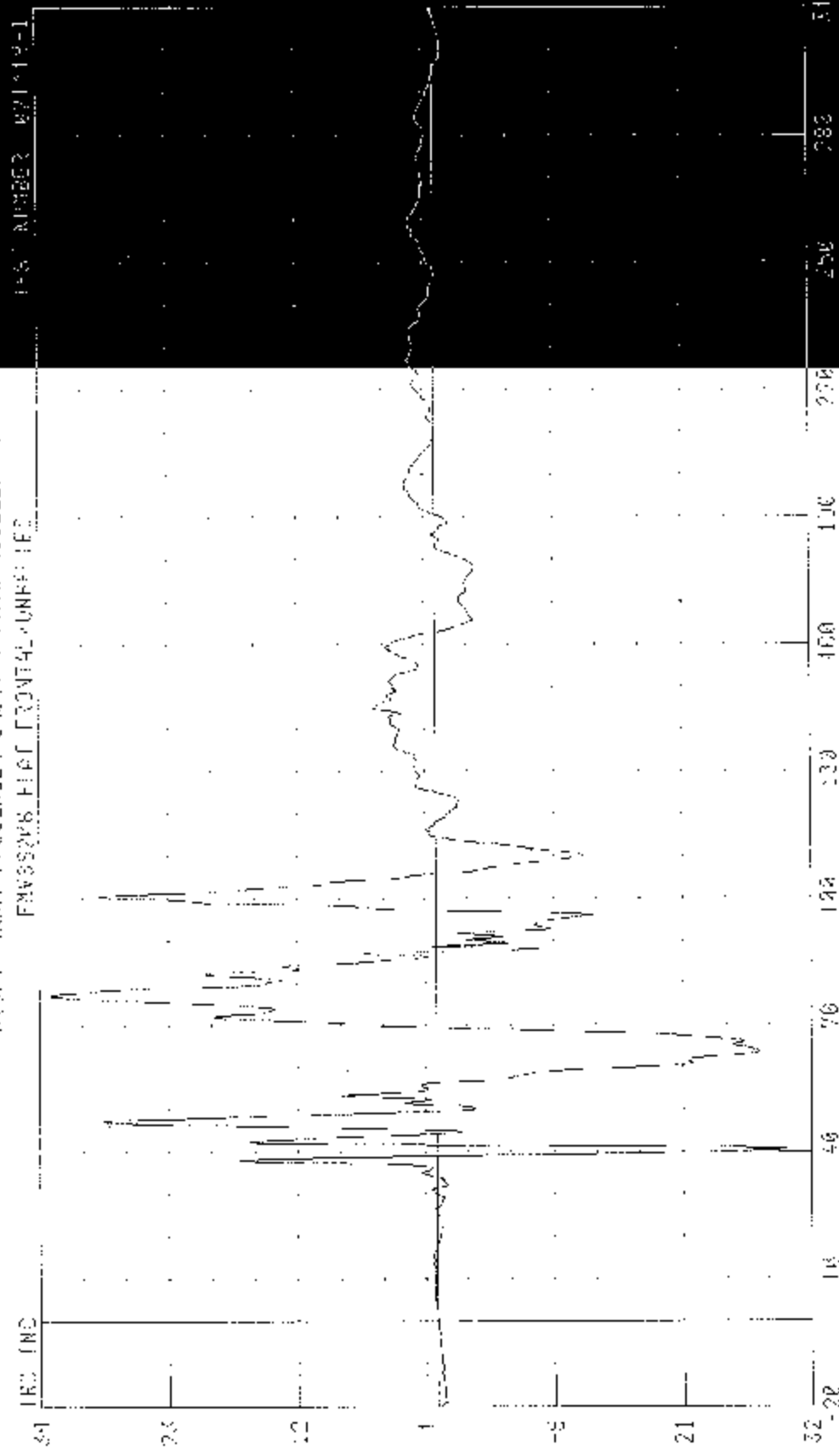
DEL-33M-17-1 845344



C-NAME - CNAME - C-CLASS 196

PEAK DATA: 08.53, 23.09, -11.75, 35.62 HS

COMP102 / 2010 1-25VOLT SILVERBUD 1500 2V0 REGULAR 1AF
 RIGHT FRONT PASSENGER CREST Y-AXIS ACCELERATION
 FMVSS208 FIAT FRONTAL IMPACT 1F2



ACCEL (G) (10-1)

CHANNEL: CS102 FILTER: CH CLASS: 100
 TIME (MS): 0 40 80 120 160 200 240 280 312
 PEAK DATA: 0.02 G 77.33 MS; -0.00 G 0.40 72 MS

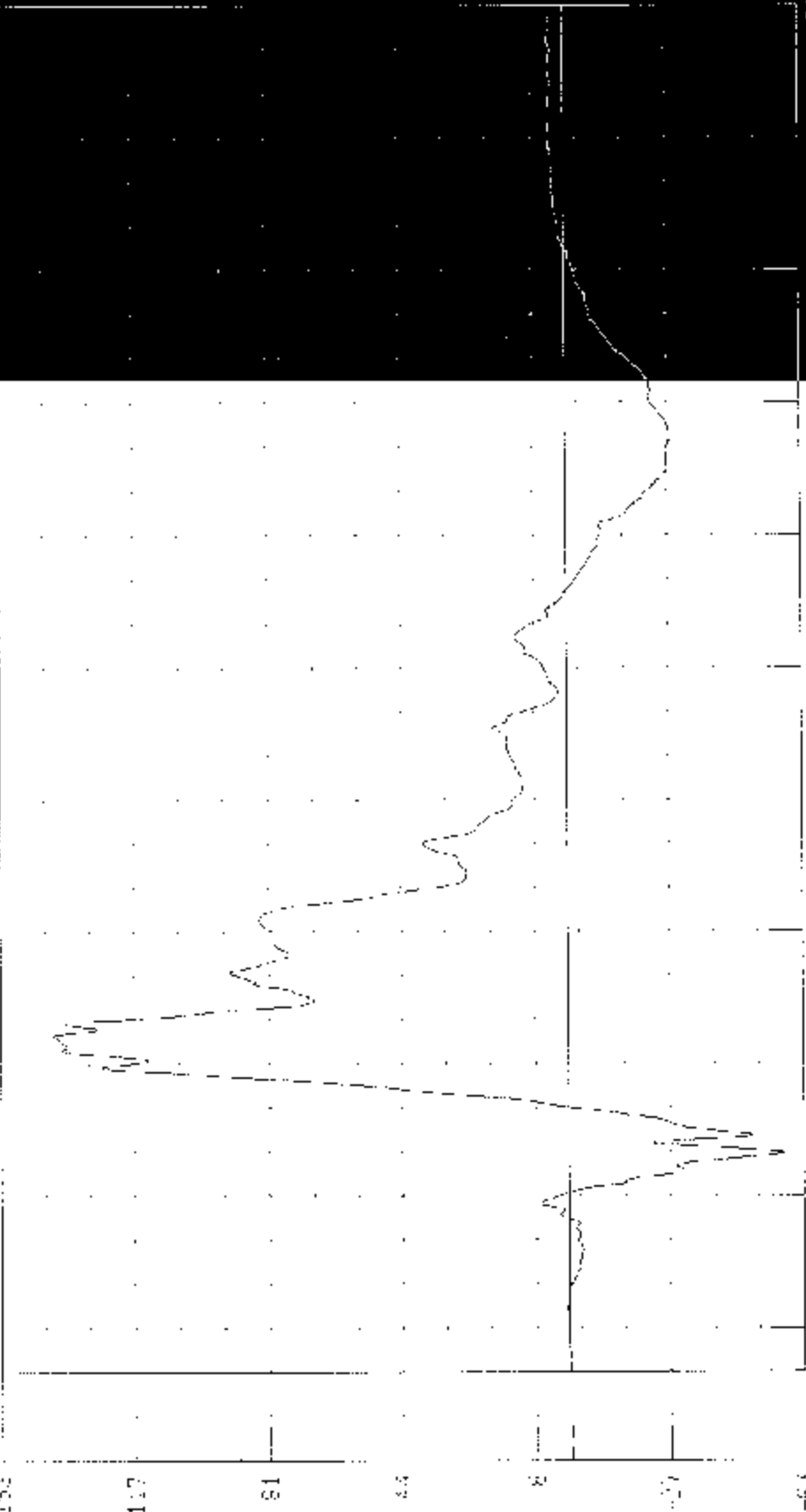
030127 / 2803 CHEVROLET SILVERADO 1500 2ND DOOR IR CAB

PICUP FRONT PASSENGER CHEST 2-AXIS ACCELERATION

CPV55048 FILED CRONTAL/INSETH

ICCT NUMBER: 021119

152



ACCELERATION (G X 10⁻²)

-6

-2

2

4

6

8

10

12

14

16

18

20

22

24

26

28

30

32

34

36

38

40

42

44

46

48

50

52

54

56

58

60

62

64

66

68

70

72

74

76

78

80

82

84

86

88

90

92

94

96

98

100

102

104

106

108

110

112

114

116

118

120

122

124

126

128

130

132

134

136

138

140

142

144

146

148

150

152

154

156

158

160

162

164

166

168

170

172

174

176

178

180

182

184

186

188

190

192

194

196

198

200

202

204

206

208

210

212

214

216

218

220

222

224

226

228

230

232

234

236

238

240

242

244

246

248

250

252

254

256

258

260

262

264

266

268

270

272

274

276

278

280

282

284

286

288

290

292

294

296

298

300

302

304

306

308

310

312

314

316

318

320

322

324

326

328

330

332

334

336

338

340

342

344

346

348

350

352

354

356

358

360

362

364

366

368

370

372

374

376

378

380

382

384

386

388

390

392

394

396

398

400

402

404

406

408

410

412

414

416

418

420

422

424

426

428

430

432

434

436

438

440

442

444

446

448

450

452

454

456

458

460

462

464

466

468

470

472

474

476

478

480

482

484

486

488

490

492

494

496

498

500

502

504

506

508

510

512

514

516

518

520

522

524

526

528

530

532

534

536

538

540

542

544

546

548

550

552

554

556

558

560

562

564

566

568

570

572

574

576

578

580

582

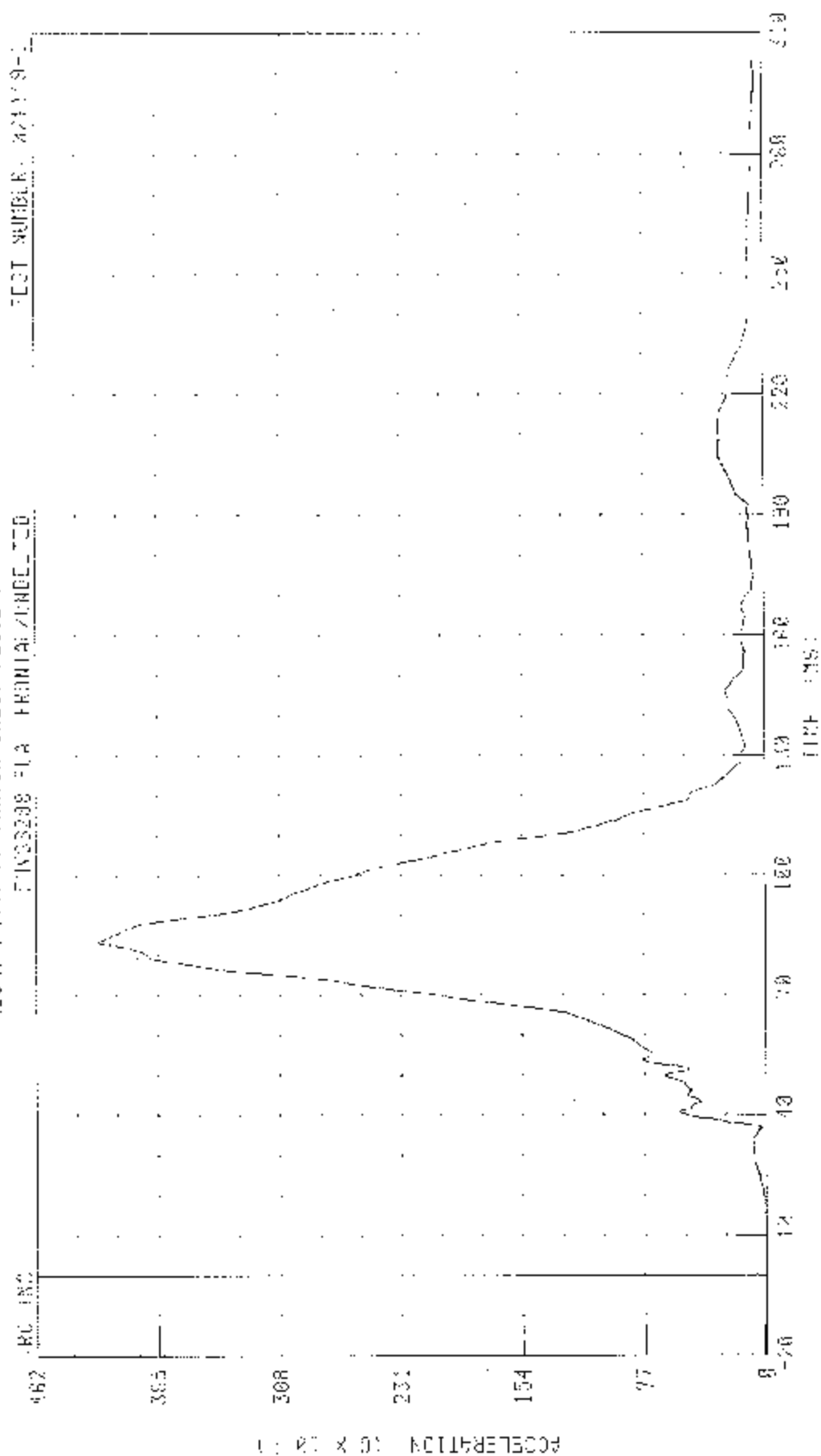
584

586

588

030-20 - MEXICAN DEFENSE AND SECURITY
030-20 - MEXICAN DEFENSE AND SECURITY

05-730N17 EINHAF AT 862539.7



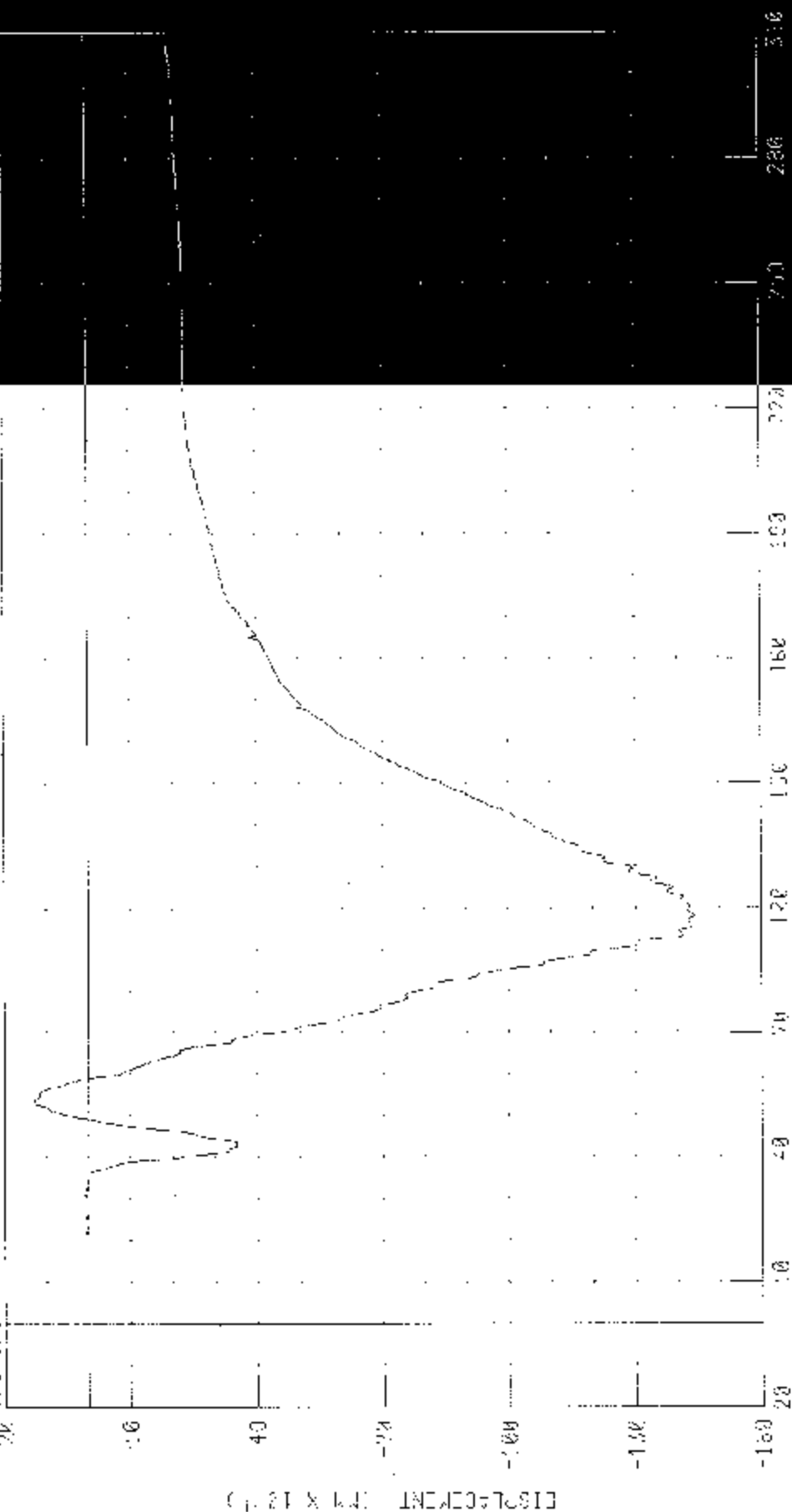
030102 / 0003 CHEVROLET SILVERADO 1-90 2ND REGULAR CAB

RIGHT FRONT PASSENGER CHEST DEFLECTION

FMVSS208 FLAT FRONTAL CRASH TEST

TPC INC

1991 NHTSA 021119-1



CHANNEL: 03:YU2 RT: TFR: 07 CLASS: 030

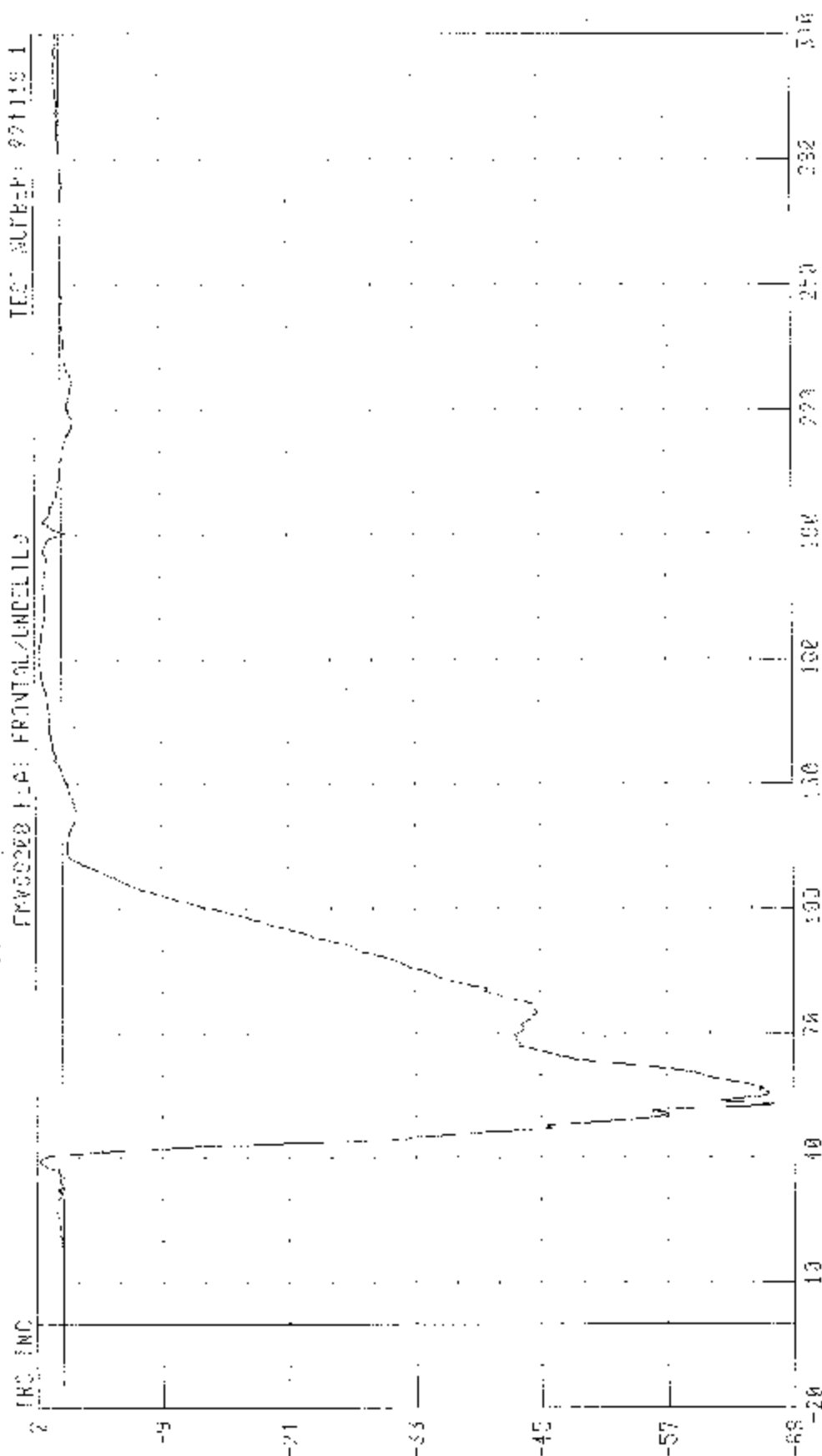
FILE: 0010 1 24 41 6 93 62 45 14 09 47 8 99 04 48

CS0117 - 2003 CHEVROLET SILVERADO 1500 2WD REGULAR 1AF

R1CP- FRONT PASSENGER LB- FIFTH FORCE

FMV0200 1AF- FRONTAL/UNDRLLO

TEST NUMBER: 021119-1



CHANNEL: 1/1072 FILTER: CH. CLASS: 600

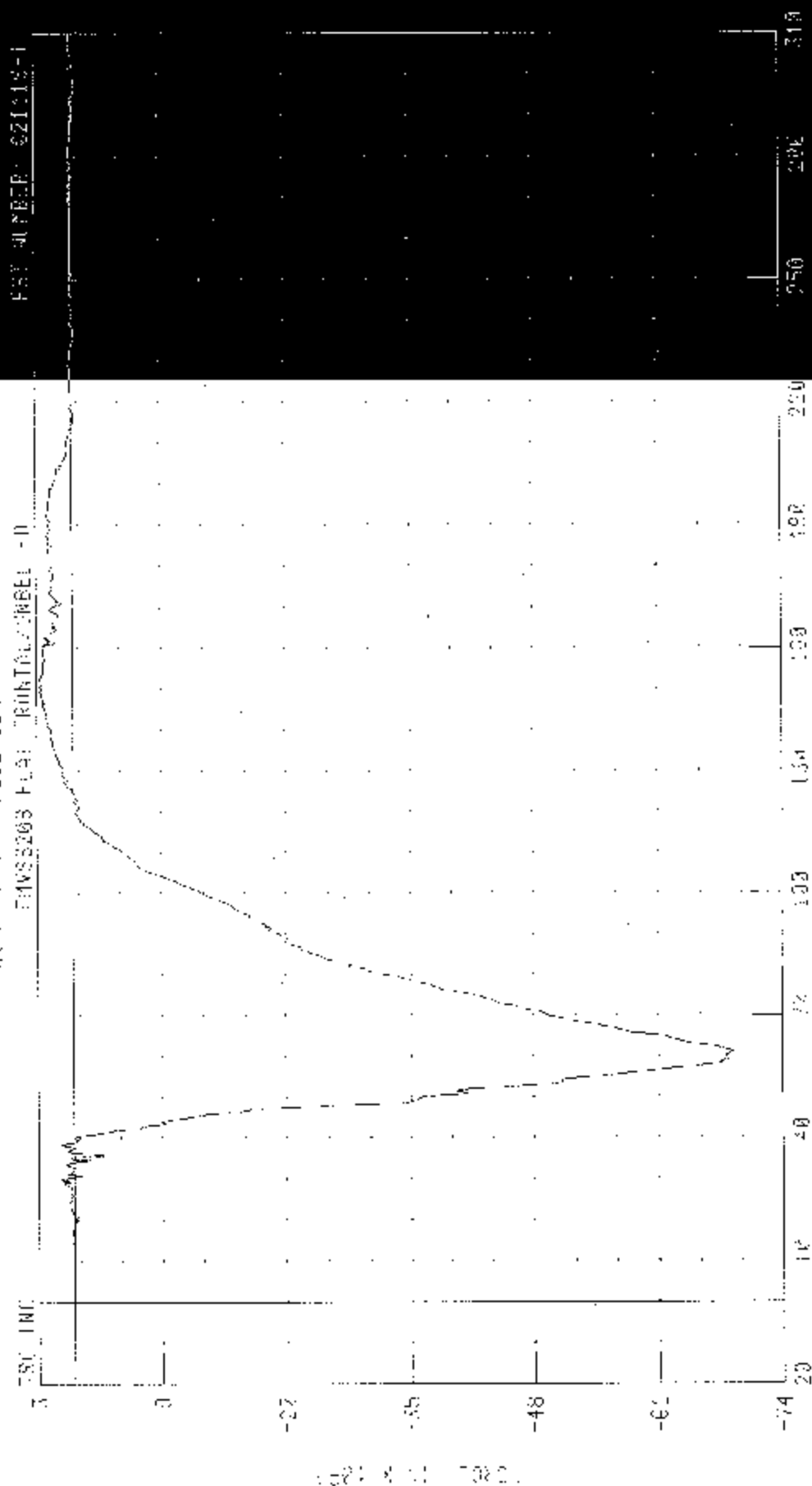
PEAK DATA: 730.00 N 0.39 56.70, -0773.20 N 0.52 58.73

030102 / 0037 0000000000 1500 AND REGULAR CDS

RIGHT FRONT TSSOLVER RIGHT FETUR FORCE

FILE NUMBER: 021119-1

THUS203 PLAT: TRONIAL/MBEL -0



CHANNEL: RH22-2 FILTER: C- CLASS: C26

TIME: 1001

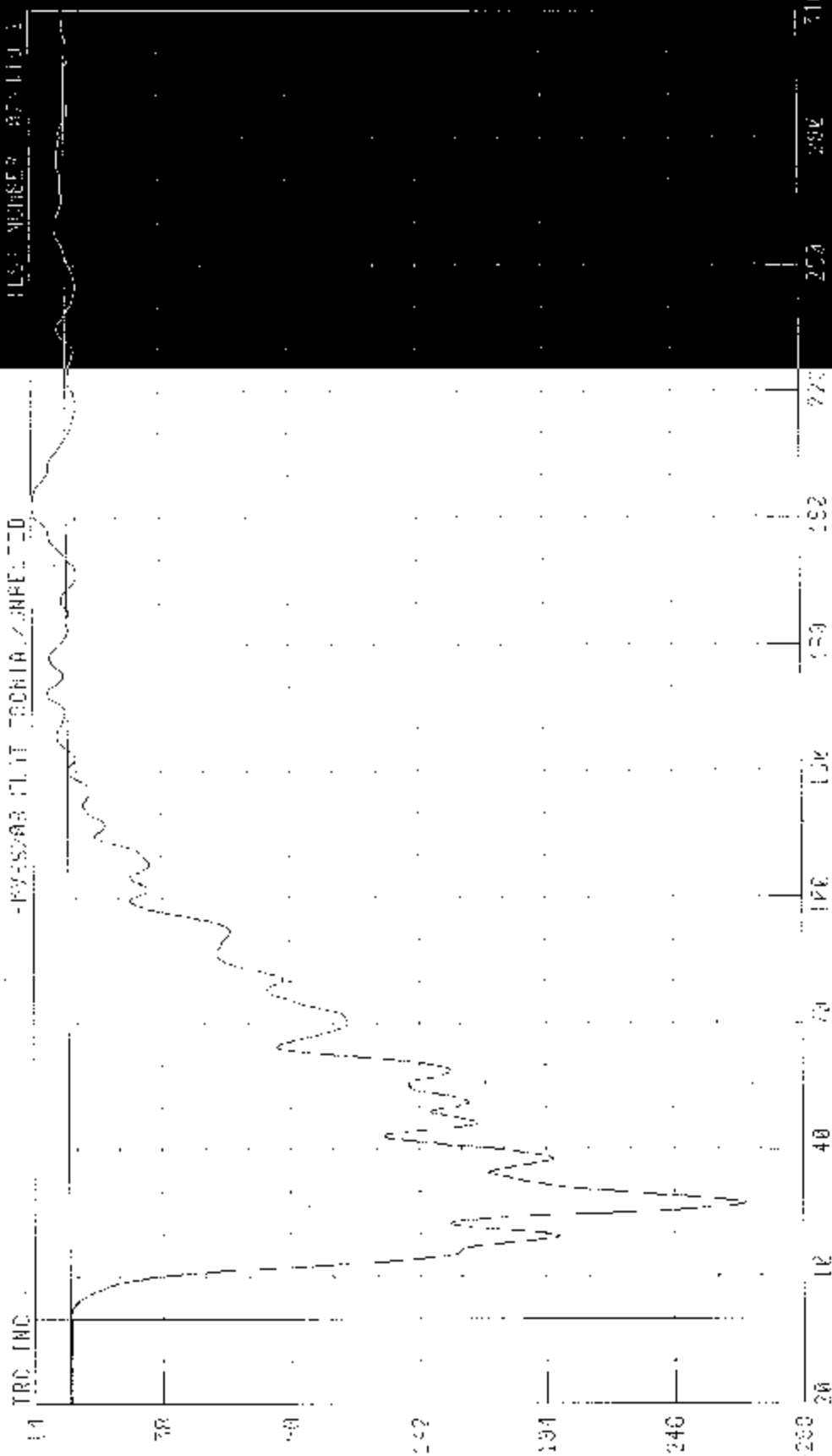
PEAK CMTA: 043.42 N 152.48 PL: 0914.72 N 9.82 19.98

C30102 / 7843 DRYTOL-ET SILVERHEAD 1503 2ND ROLLER CDR

LEFT RENE 8-01 CROSSWINDER 8-1812 ACCELERATION

-WESDAR PLIT TECHIA/INFL-ED

FILE NUMBER 87-119-1



TIME (min)

WINDING - 15XXC FILTER - 05 01455 CC

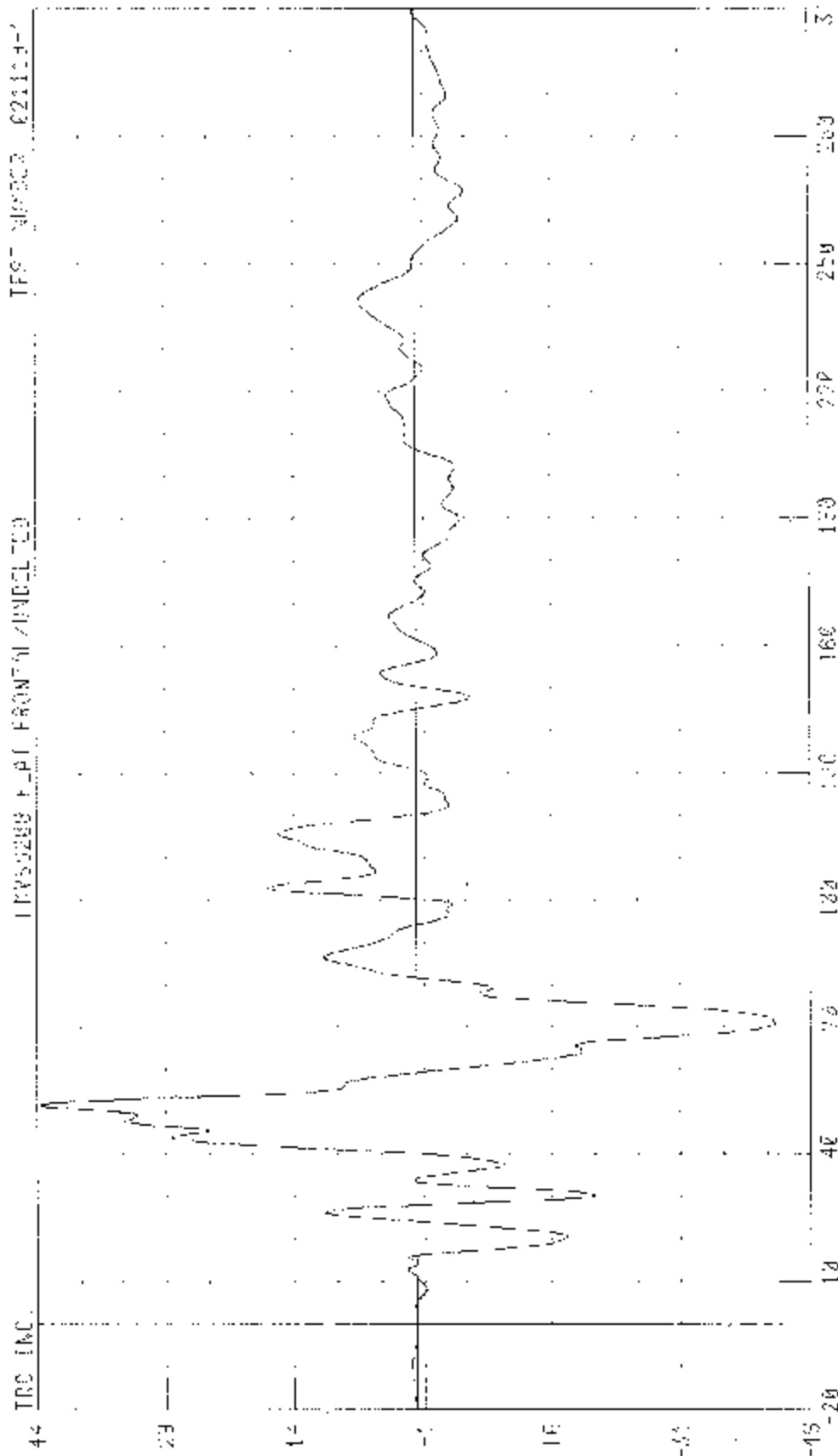
PEAK DATA: 1.35 0.6 185 12.4% 20.49 0.8 27.35 80

C30102 / 2003 CHEVROLET 5 V6 2400 1500 240 REAR SHOCK

LEFT REAR SHOCK CROSSMEMBER Y-AXIS ACCELERATION

TRUCK DATA FILE FRONT/REAR

TRUCK DATA FILE 021119-1



ACCELERATION (G x 10^-4)

TIME (SEC)

PEAK DATA: 4.57 G @ 51.73 MS: -1.70 G @ 70.80 MS

CHANNEL 15889 1.1 LR CR CROSS SHOCK

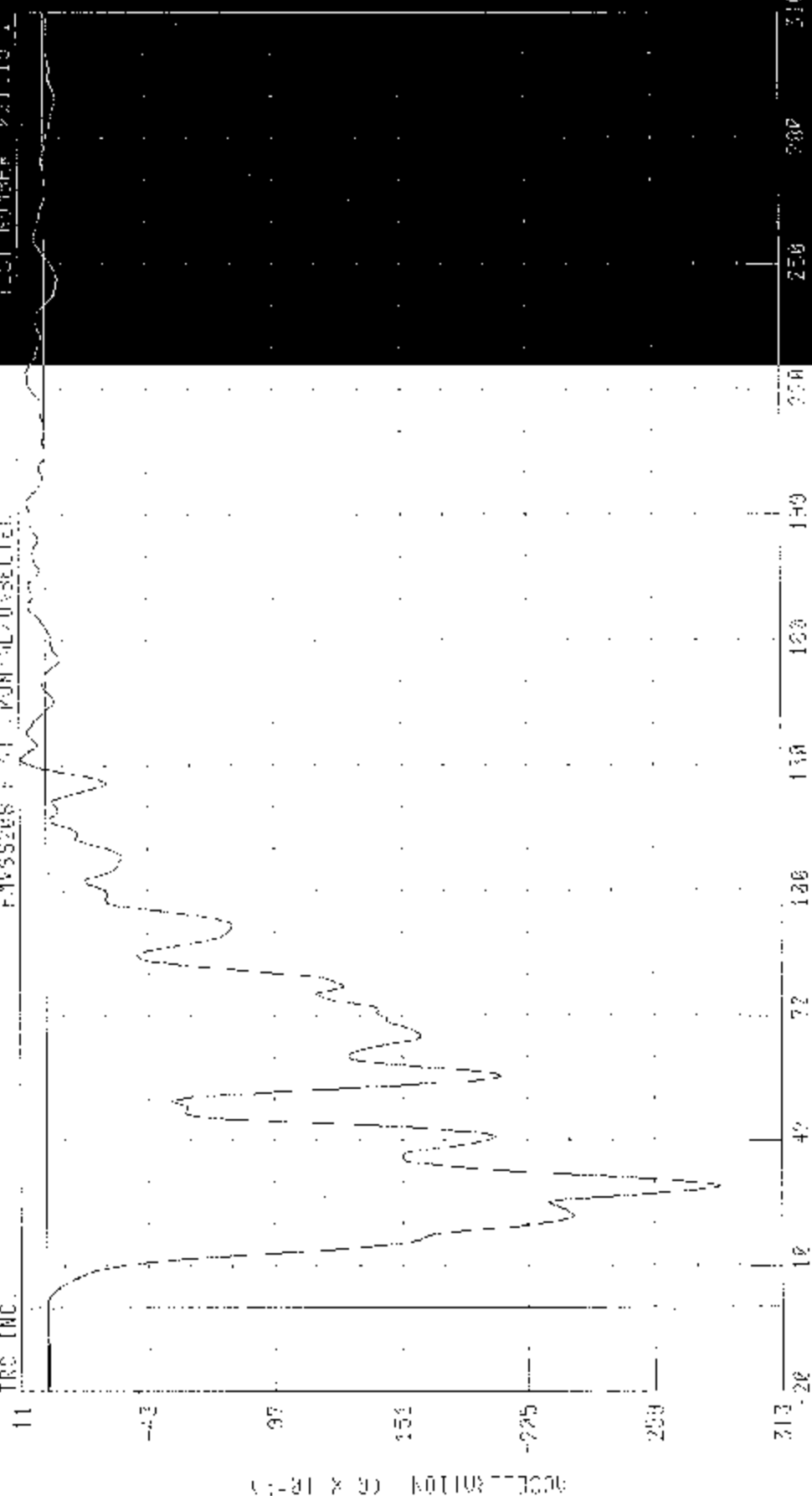
033142 / 2005 CHEVROLET CORVETTE 3.0 2ND R-CLIP 1AD

RIGHT REAR CLIP GROSS/NET/PER X-AXIS ACCELERATION

FMVSS225 FRICT TPONTAL/UNBELTED

TRC INC.

TEST NUMBER 021119-1



LINE (MS)

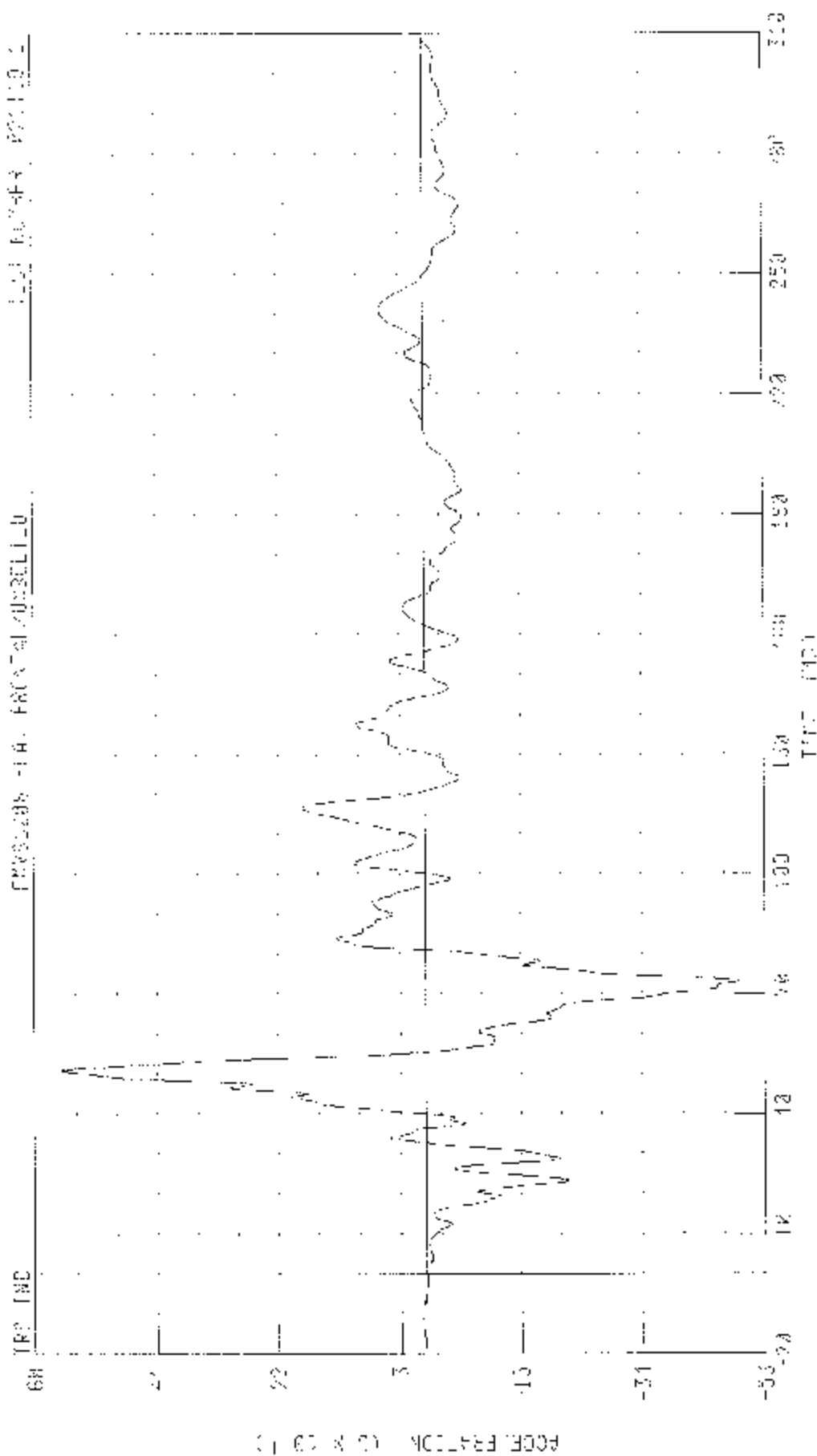
PEAK CLIP: 1.00 G 131 MS: -0.00 G 0.00 MS

FILTER: 0.01 CLIP: 0.2

CHANNEL: RAWNO

1559187 = 2003 CICQUELE 511 VFFAC 1500 25L 12.1L 10.1L

UNIT REE SECT DOCUMENTS - STYL - 2011-03-07 14:04

[illegible]

CH 3271: 1985-86

THE UNIVERSITY OF CHICAGO

100 FRONT STREET, OULIPPE X-119 430-1100, 100

1-5173 REG. D. C-1

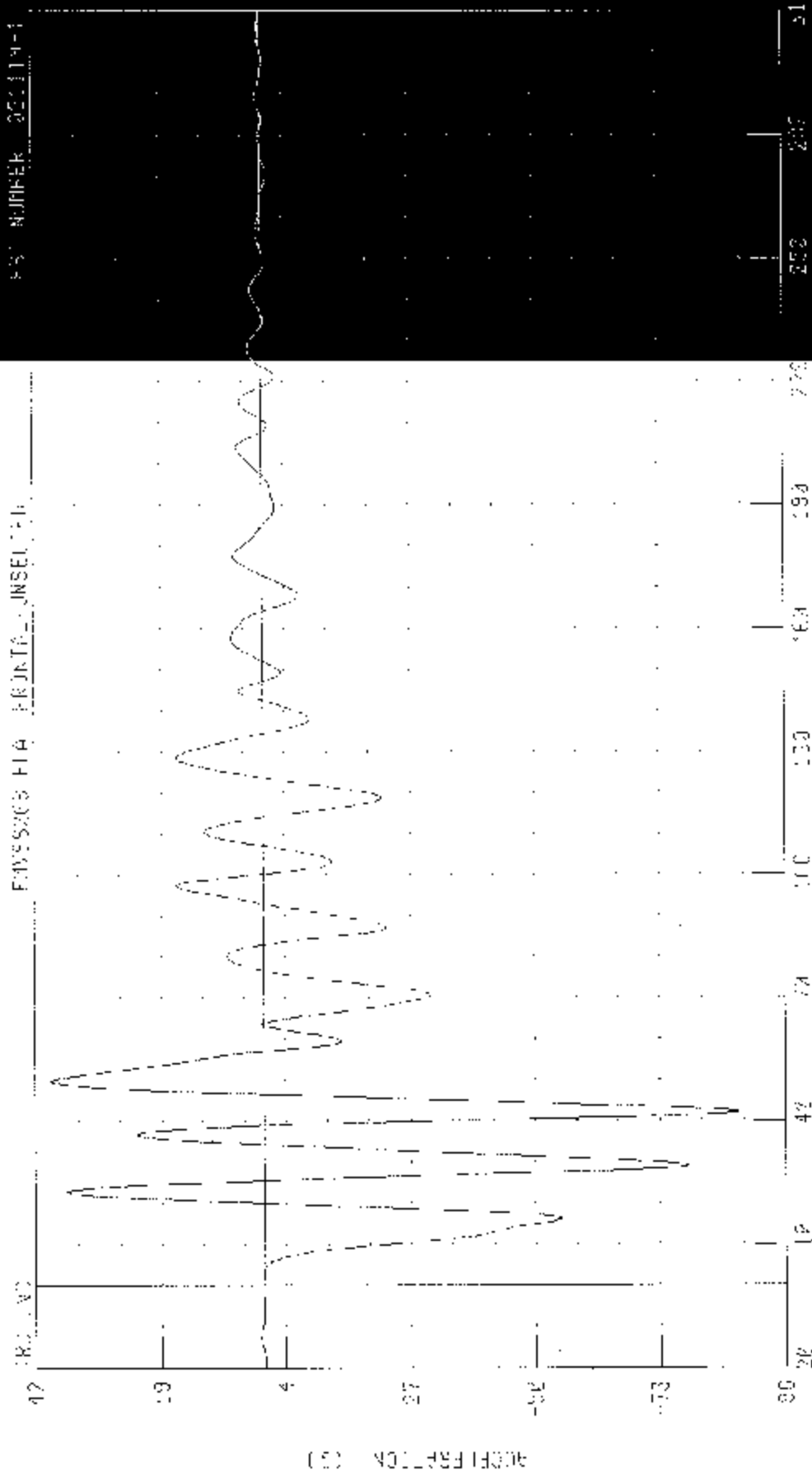
[illegible]

030102 / 2K25 CH-VEHICLE SILVERADO 1500 2WD REGULAR DIE

RIGHT FRONT SPRING COLLAR W-HATCH ASSEMBLY CR

PHYSICS HIA FRONTAL INSECT HIA

TEST NUMBER 021119-1



TIME in ms

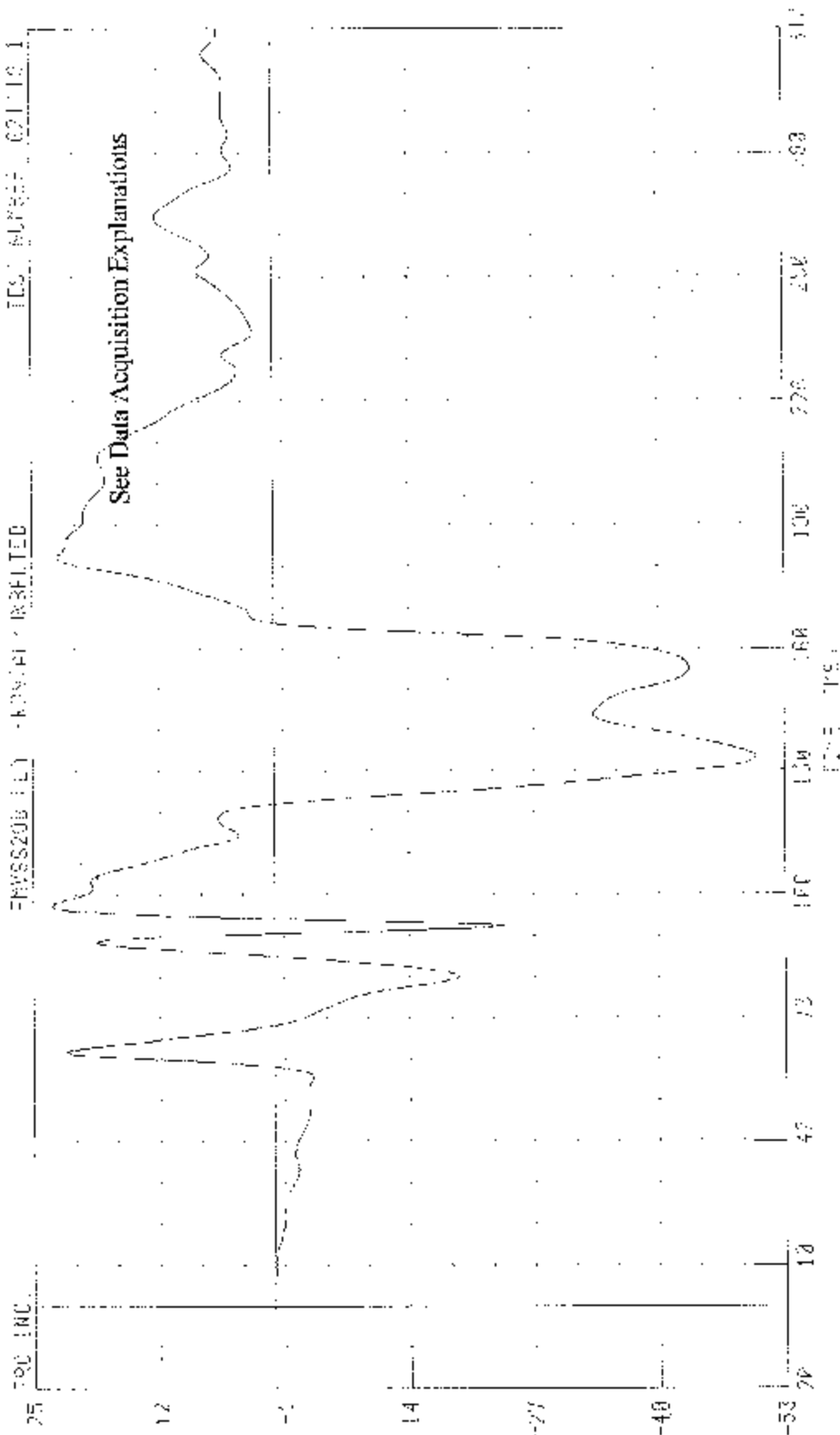
CHANNEL REFNO 41.00 CH. CLASS 22 24PK JF15. 30 92 0 0 15.34 15. 107 81 0 0 0 2 0 0 10

[illegible]

ML-5533H 2.4GHz FHSS

DELIVERED BY AIR - 17:00

13101910



SECRET

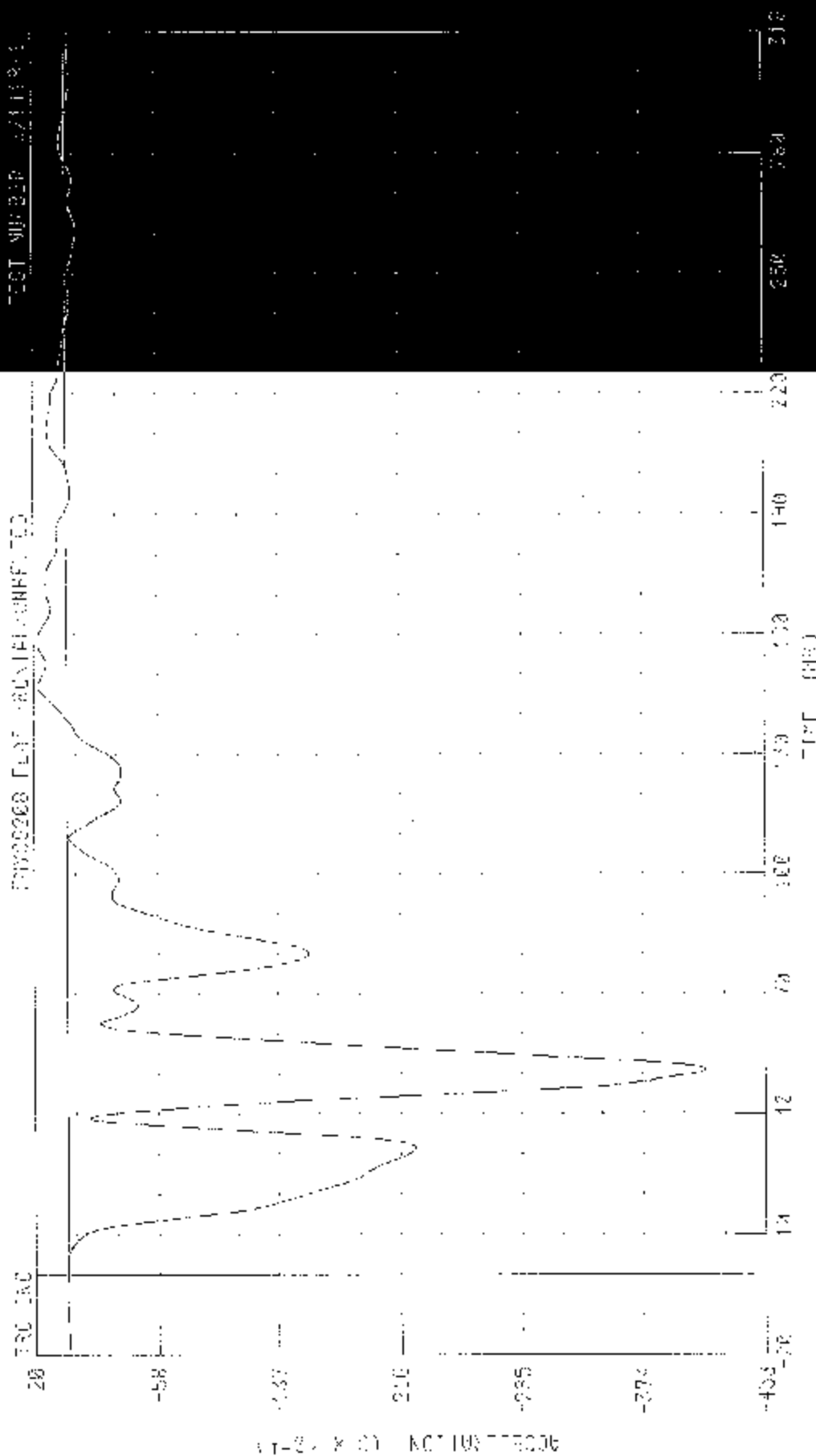
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371 | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 | 521 | 522 | 523 | 52 |
|--|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
|--|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|

030107 2023 DEVEL= 51440 150 24 43047 43

NOISE CONTROL ACT

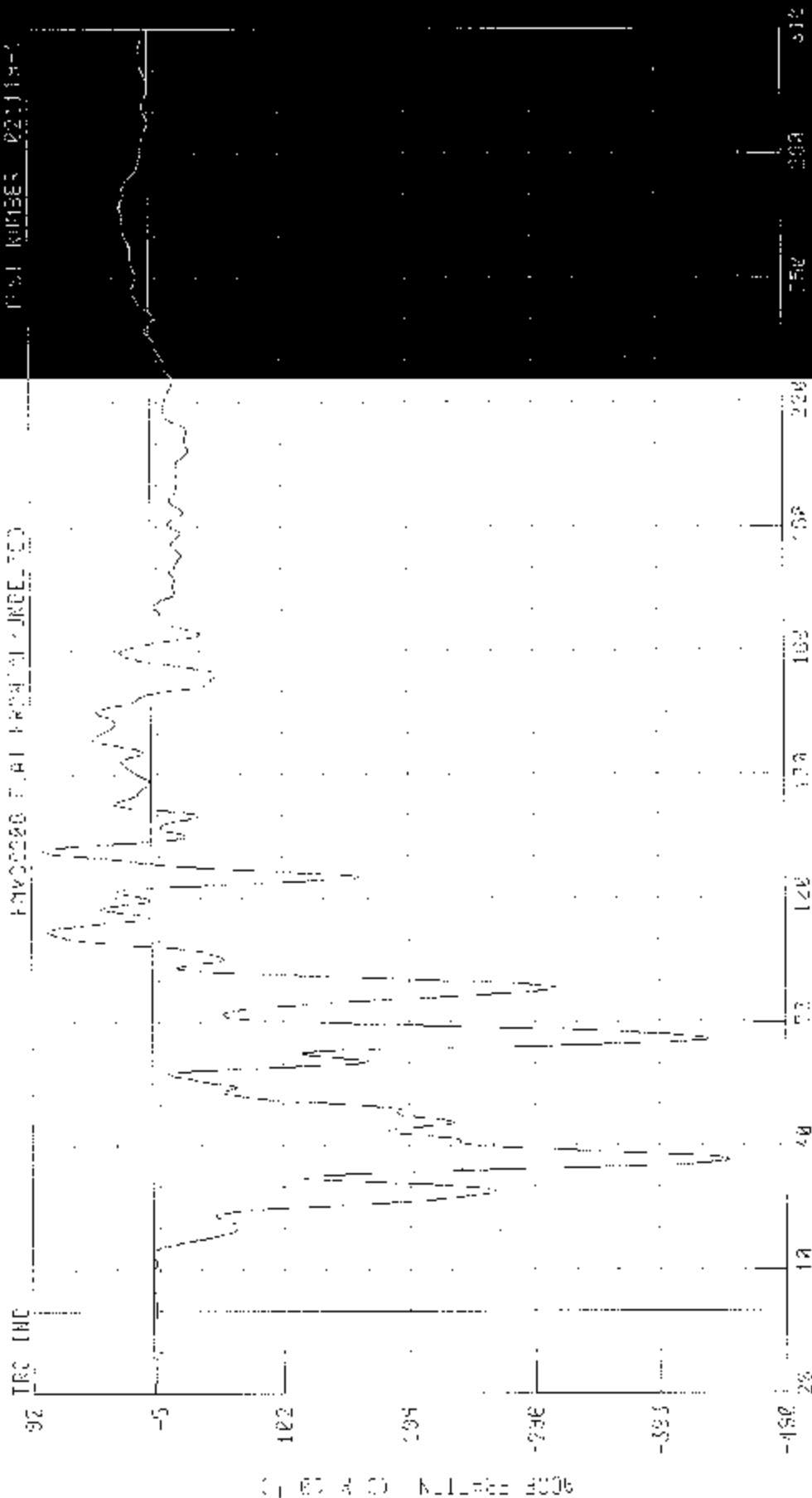
0-390-14178-5 895004

TEST 90:25 2/1/93



UNIVERSITY OF CALIFORNIA

[illegible]

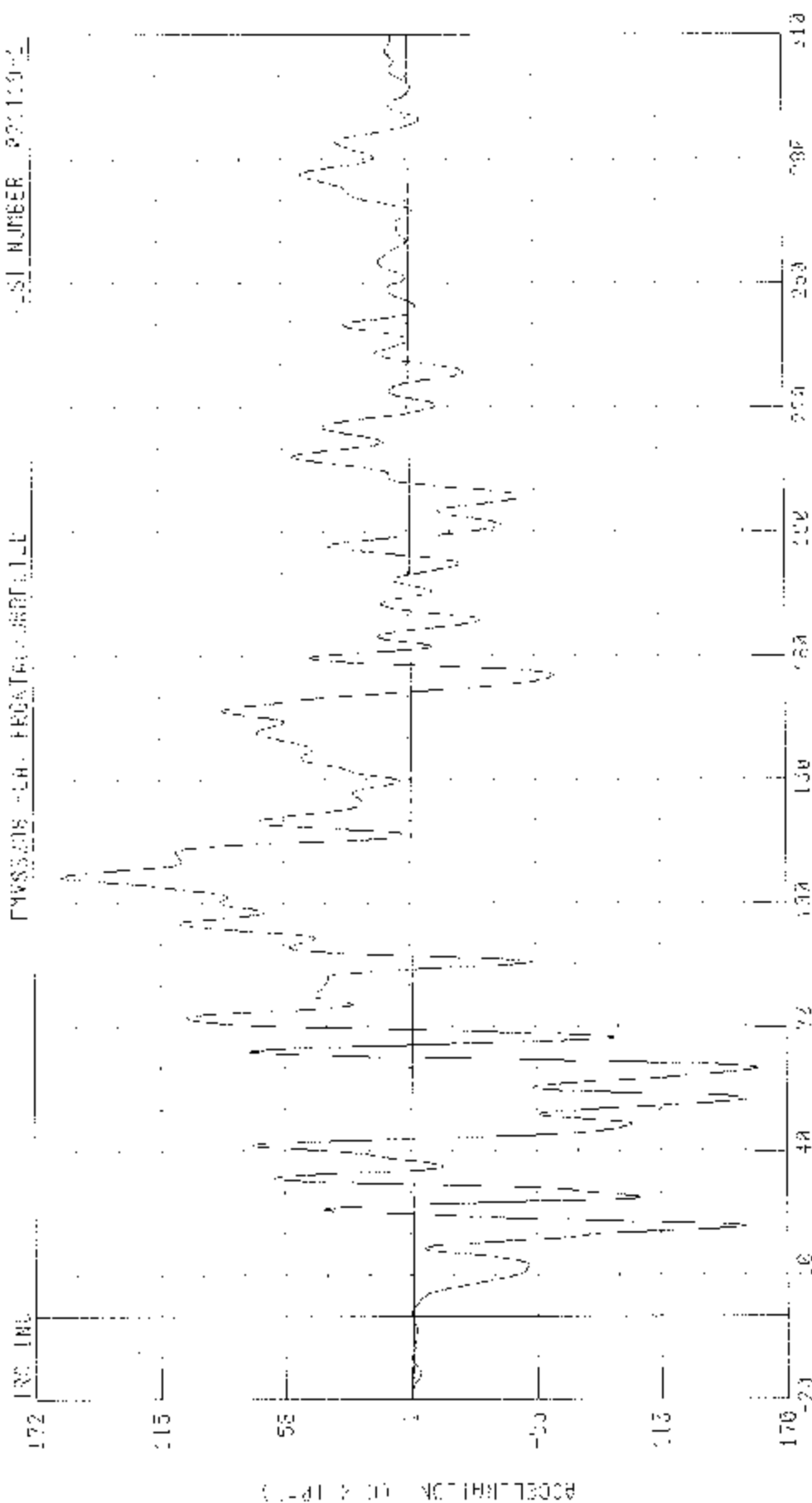
[illegible][illegible]

COMALAS, J. 2007. OCEANOGRAPHY AND CLIMATE OF THE

THE UNIVERSITY OF CHICAGO

771386 • GJ 4384 • H7 - 51:55ABJ

- SJ MUEER 0013902

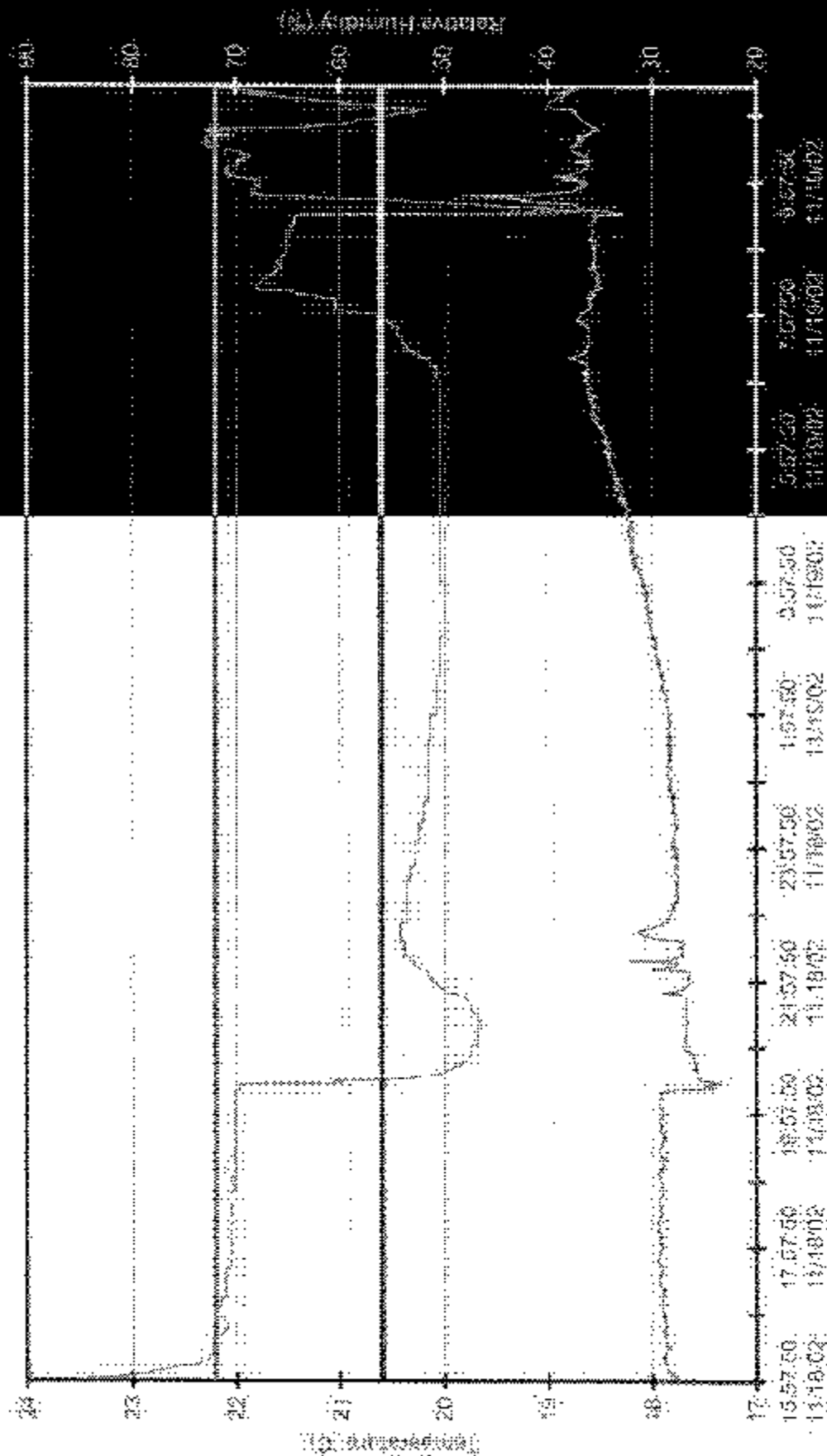


1961

[illegible]

CHAPMAN, RICHARD L. 1943. A study of the

C30102 / 2003 Chevrolet Silverado Regular Cab 021119-1



Pre-Test Dummy Soak Time (Test Time: 11:23)

Lower and Upper Temperature Bounds Indicated with Bold Lines at 20.6°C and 22.2°C

Section 7
Photographs

List of Photographs

| <u>Image</u> | <u>Image Title</u> | <u>Page</u> |
|--------------|--|-------------|
| 1 | Pre-Test Front View | 7-5 |
| 2 | Post-Test Front View | 7-6 |
| 3 | Pre-Test Left Side View | 7-7 |
| 4 | Post-Test Left Side View | 7-8 |
| 5 | Pre-Test Right Side View | 7-9 |
| 6 | Post-Test Right Side View | 7-10 |
| 7 | Pre-Test Left Front Three-Quarter View | 7-11 |
| 8 | Post-Test Left Front Three-Quarter View | 7-12 |
| 9 | Pre-Test Right Rear Three-Quarter View | 7-13 |
| 10 | Post-Test Right Rear Three-Quarter View | 7-14 |
| 11 | Pre-Test Windshield View | 7-15 |
| 12 | Post-Test Windshield View | 7-16 |
| 13 | Pre-Test Engine Compartment View | 7-17 |
| 14 | Post-Test Engine Compartment View | 7-18 |
| 15 | Pre-Test Steering Column and Firewall - Under Hood View | 7-19 |
| 16 | Post-Test Steering Column and Firewall - Under Hood View | 7-20 |
| 17 | Pre-Test Steering Column and Steering Box View | 7-21 |
| 18 | Post-Test Steering Column and Steering Box View | 7-22 |
| 19 | Pre-Test Steering Column and Firewall - Interior View | 7-23 |
| 20 | Post-Test Steering Column and Firewall - Interior View | 7-24 |
| 21 | Pre-Test Front Underbody View | 7-25 |
| 22 | Post-Test Front Underbody View | 7-26 |
| 23 | Pre-Test Mid Underbody View | 7-27 |
| 24 | Post-Test Mid Underbody View | 7-28 |
| 25 | Pre-Test Rear Underbody View | 7-29 |
| 26 | Post-Test Rear Underbody View | 7-30 |
| 27 | Pre-Test Fuel Tank View | 7-31 |
| 28 | Post-Test Fuel Tank View | 7-32 |
| 29 | Pre-Test Fuel Lines and Filter View | 7-33 |

List of Photographs, Continued

| <u>Image</u> | <u>Image Title</u> | <u>Page</u> |
|--------------|--|-------------|
| 30 | Post-Test Fuel Lines and Filter View | 7-34 |
| 31 | Pre-Test Fuel Filler Neck View | 7-35 |
| 32 | Post-Test Fuel Filler Neck View | 7-36 |
| 33 | Pre-Test Fuel Filler Cap View | 7-37 |
| 34 | Post-Test Fuel Filler Cap View | 7-38 |
| 35 | Pre-Test Driver Dummy Front View | 7-39 |
| 36 | Post-Test Driver Dummy Front View | 7-40 |
| 37 | Pre-Test Driver Dummy Position View | 7-41 |
| 38 | Post-Test Driver Dummy Position View | 7-42 |
| 39 | Pre-Test Driver Dummy & Vehicle Intrusion View | 7-43 |
| 40 | Post-Test Driver Dummy & Vehicle Intrusion View | 7-44 |
| 41 | Pre-Test Passenger Dummy Front View | 7-45 |
| 42 | Post-Test Passenger Dummy Front View | 7-46 |
| 43 | Pre-Test Passenger Dummy Position View | 7-47 |
| 44 | Post-Test Passenger Dummy Position View | 7-48 |
| 45 | Pre-Test Passenger Dummy & Vehicle Intrusion View | 7-49 |
| 46 | Post-Test Passenger Dummy & Vehicle Intrusion View | 7-50 |
| 47 | Post-Test Driver Dummy View | 7-51 |
| 48 | Post-Test Driver Dummy Head Contact - View 1 | 7-52 |
| 49 | Post-Test Driver Dummy Head Contact - View 2 | 7-53 |
| 50 | Pre-Test Driver Dummy Knee Bolster View | 7-54 |
| 51 | Post-Test Driver Dummy Knee Contact - View 1 | 7-55 |
| 52 | Post-Test Driver Dummy Knee Contact - View 2 | 7-56 |
| 53 | Post-Test Passenger Dummy View | 7-57 |
| 54 | Post-Test Passenger Dummy Head Contact - View 1 | 7-58 |
| 55 | Post-Test Passenger Dummy Head Contact - View 2 | 7-59 |
| 56 | Pre-Test Passenger Dummy Knee Bolster View | 7-60 |
| 57 | Post-Test Passenger Dummy Knee Contact - View 1 | 7-61 |
| 58 | Post-Test Passenger Dummy Knee Contact - View 2 | 7-62 |

List of Photographs, Continued

| <u>Image</u> | <u>Image Title</u> | <u>Page</u> |
|--------------|---|-------------|
| 59 | Post-Test Vehicle on Static Rollover Device - 90° View | 7-63 |
| 60 | Pre-Test Vehicle Ballast View | 7-64 |
| 61 | Pre-Test Vehicle Certification and Recommended Tire Pressure Label View | 7-65 |
| 62 | Pre-Test Vehicle Window Sticker | 7-66 |

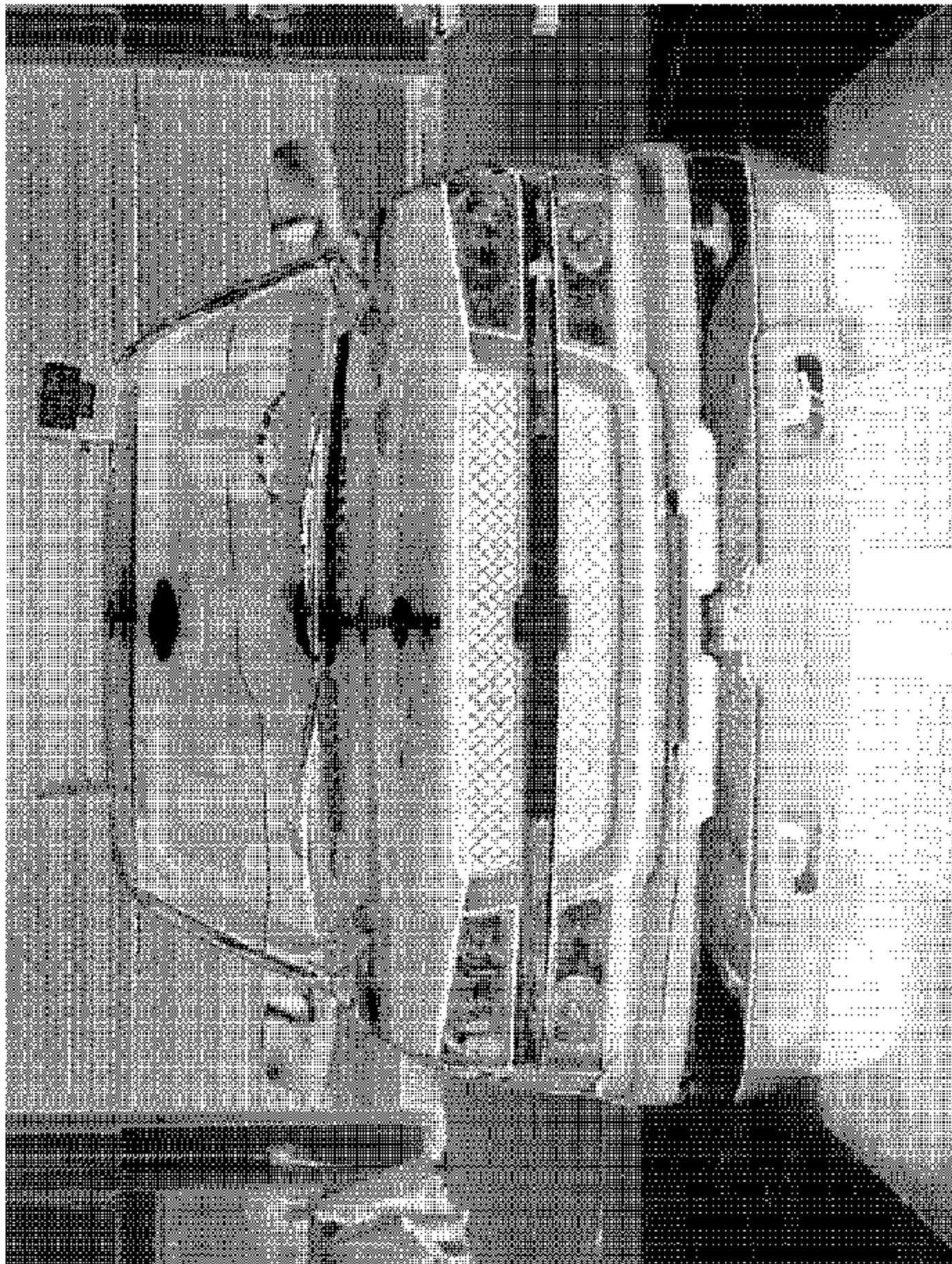


Image 1 Pre-Test Front View

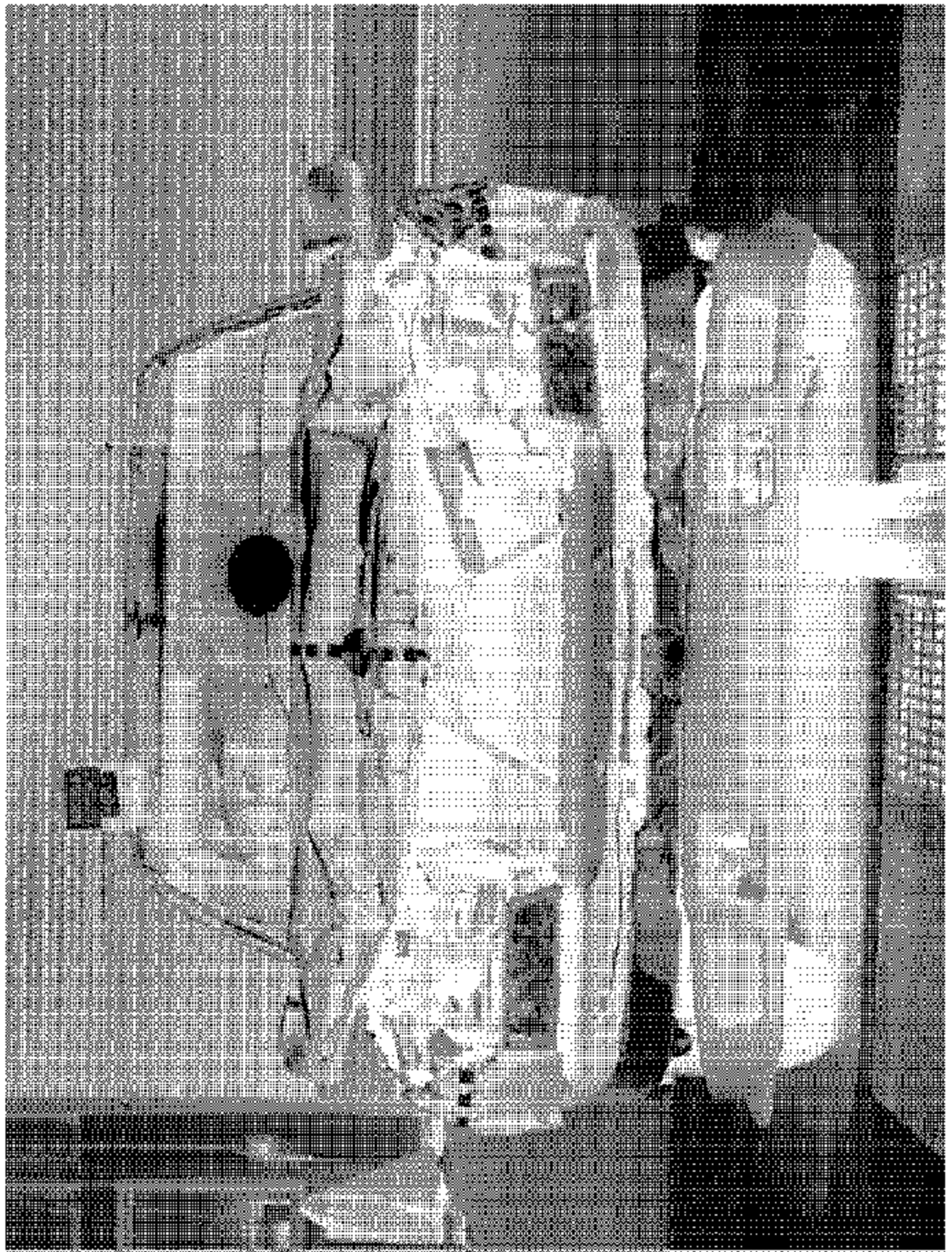


Image 2 Post-Test Front View

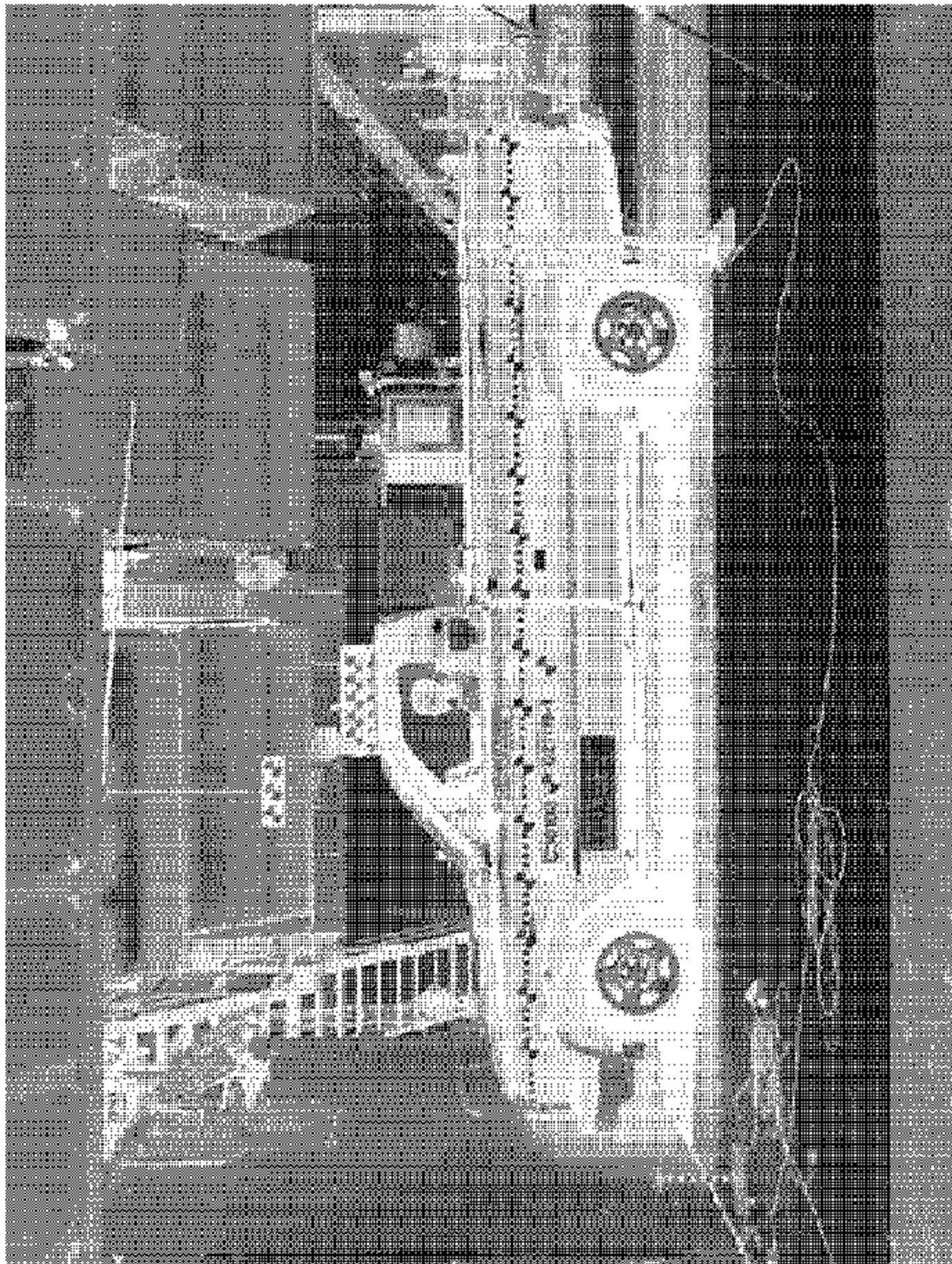


Image 3 Pre-Test Left Side View

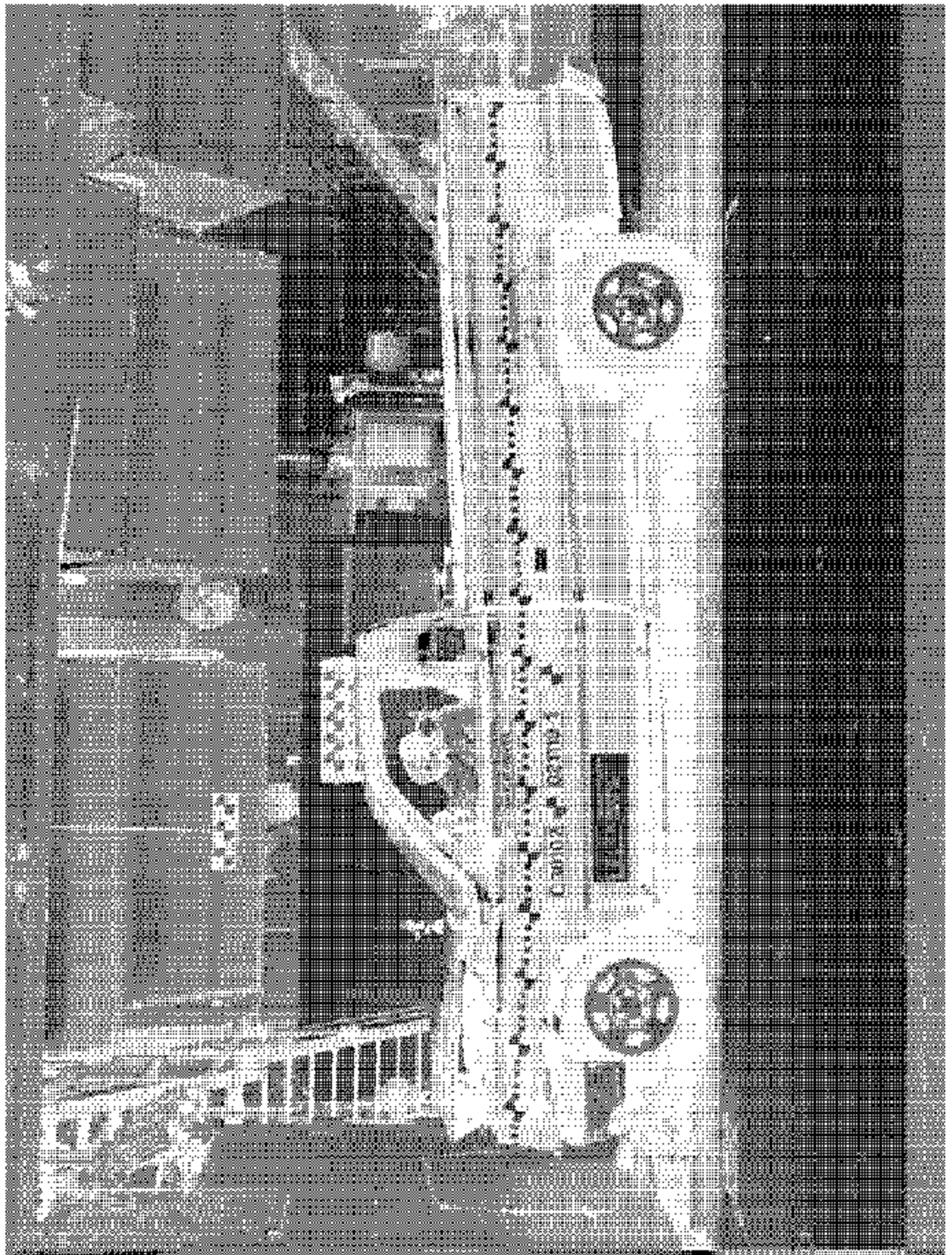


Image 4 Post-Test Left Side View

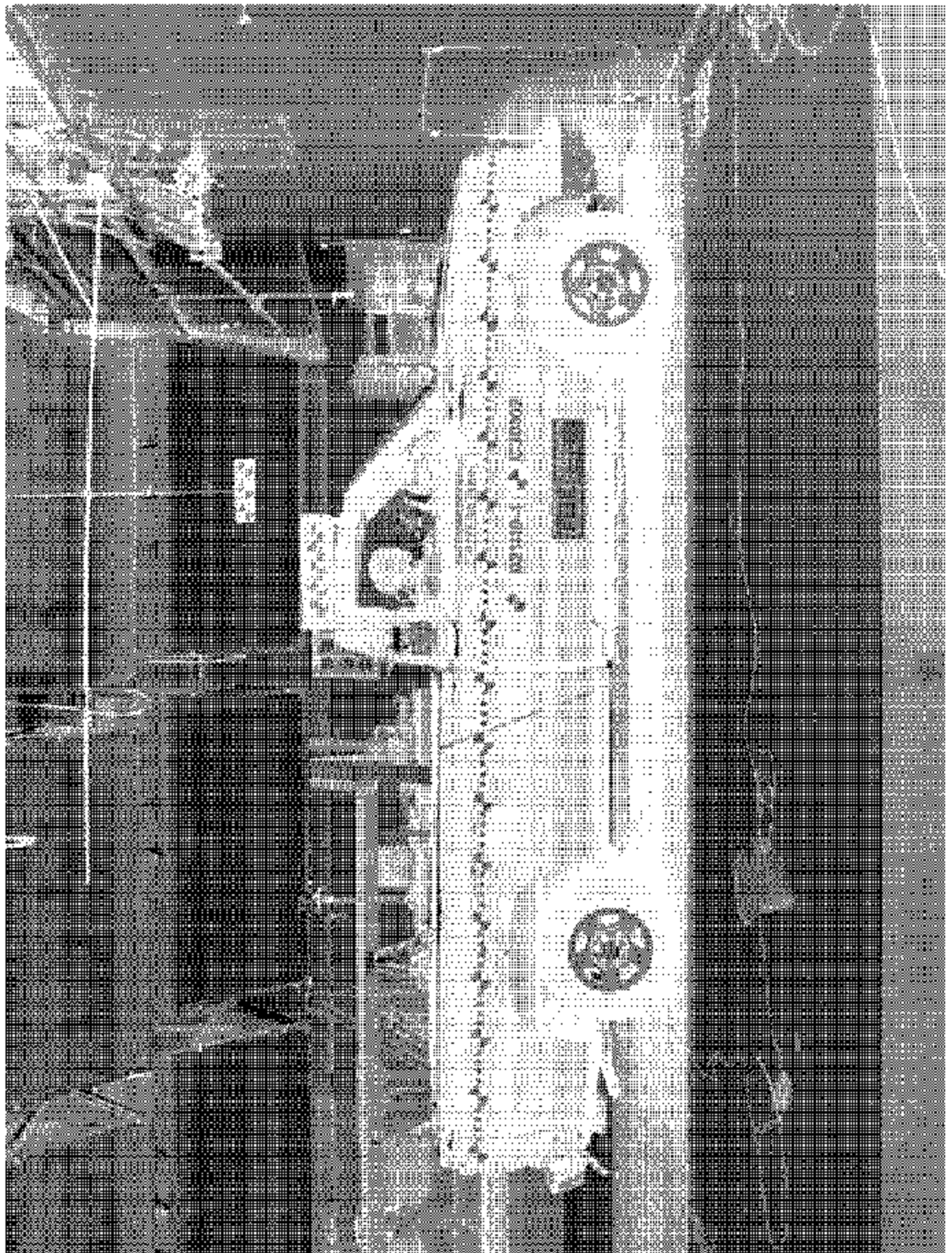


Image 5 Pre-Test Right Side View

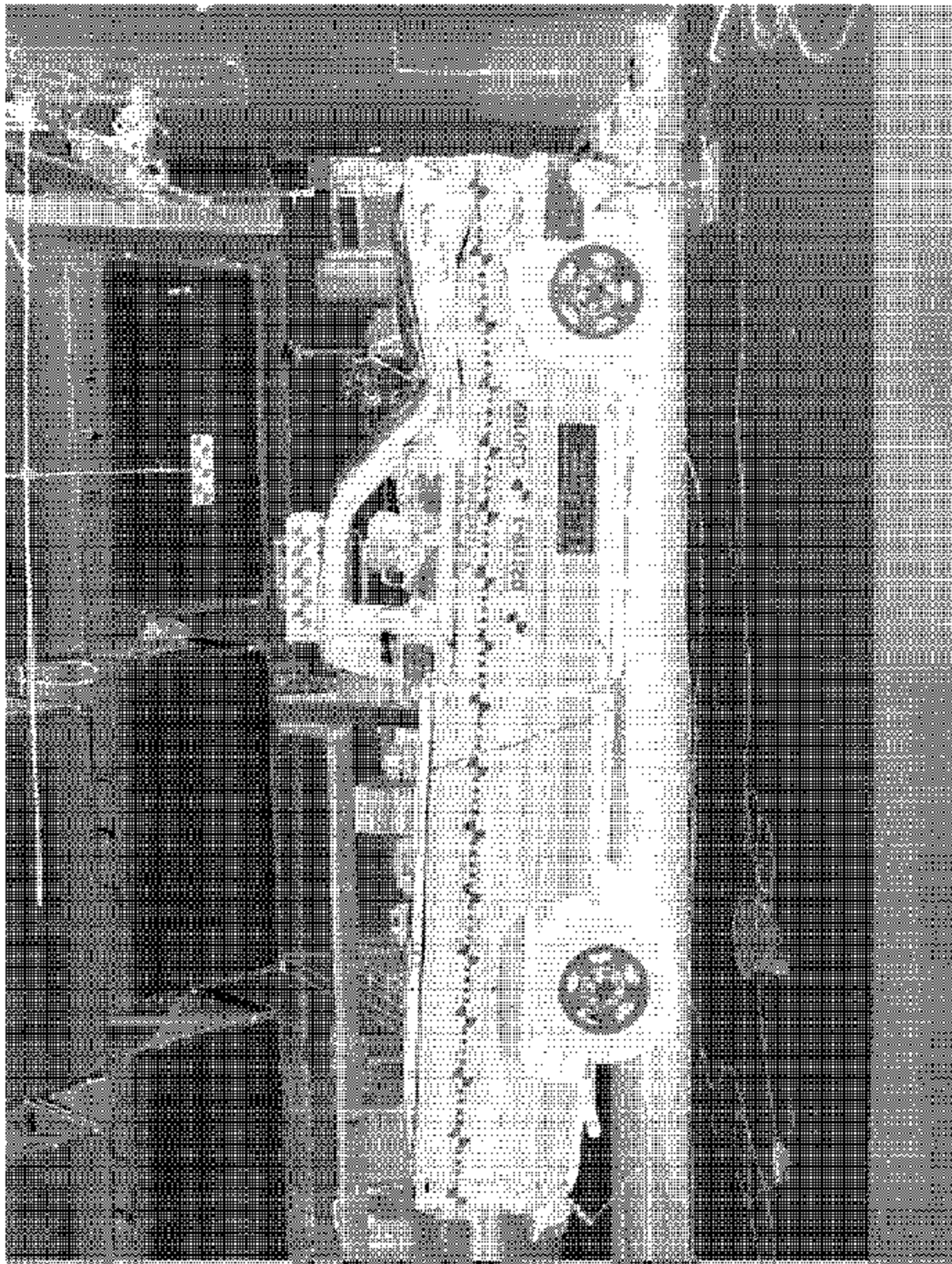


Image 6 Post-Test Right Side View

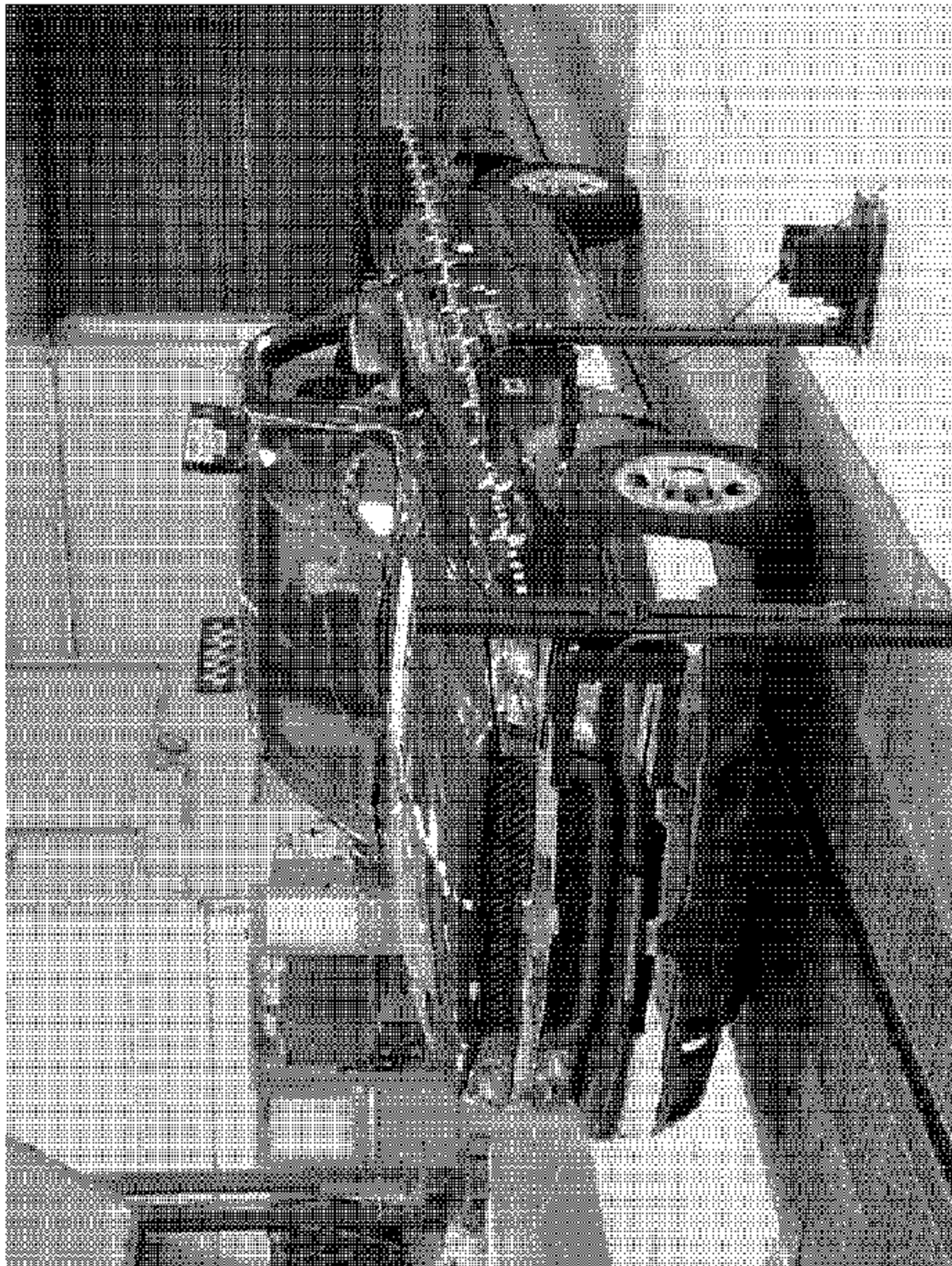


Image 7 Pre-Test Left Front Three-Quarter View

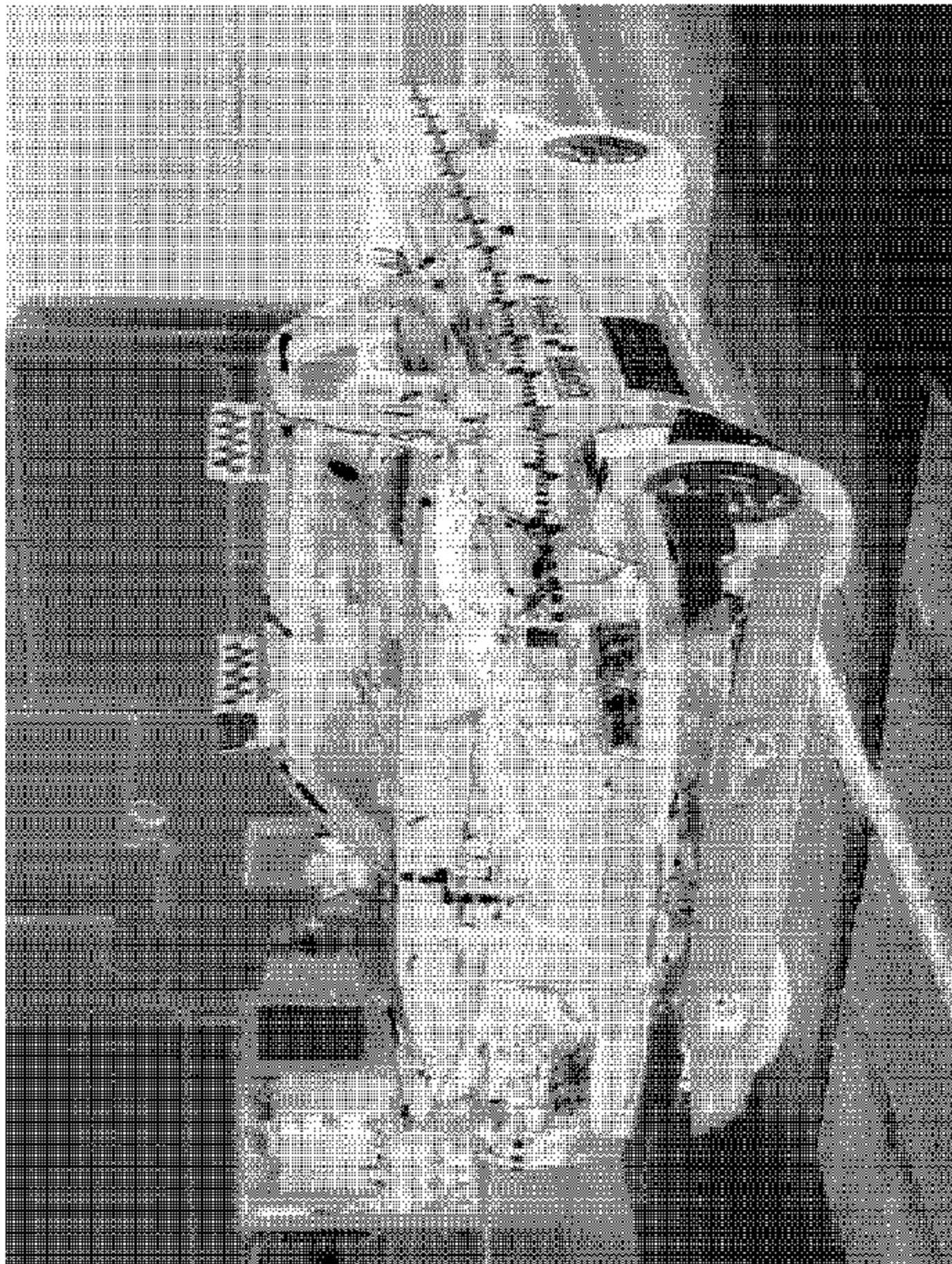


Image 8 Post-Test Left Front Three-Quarter View

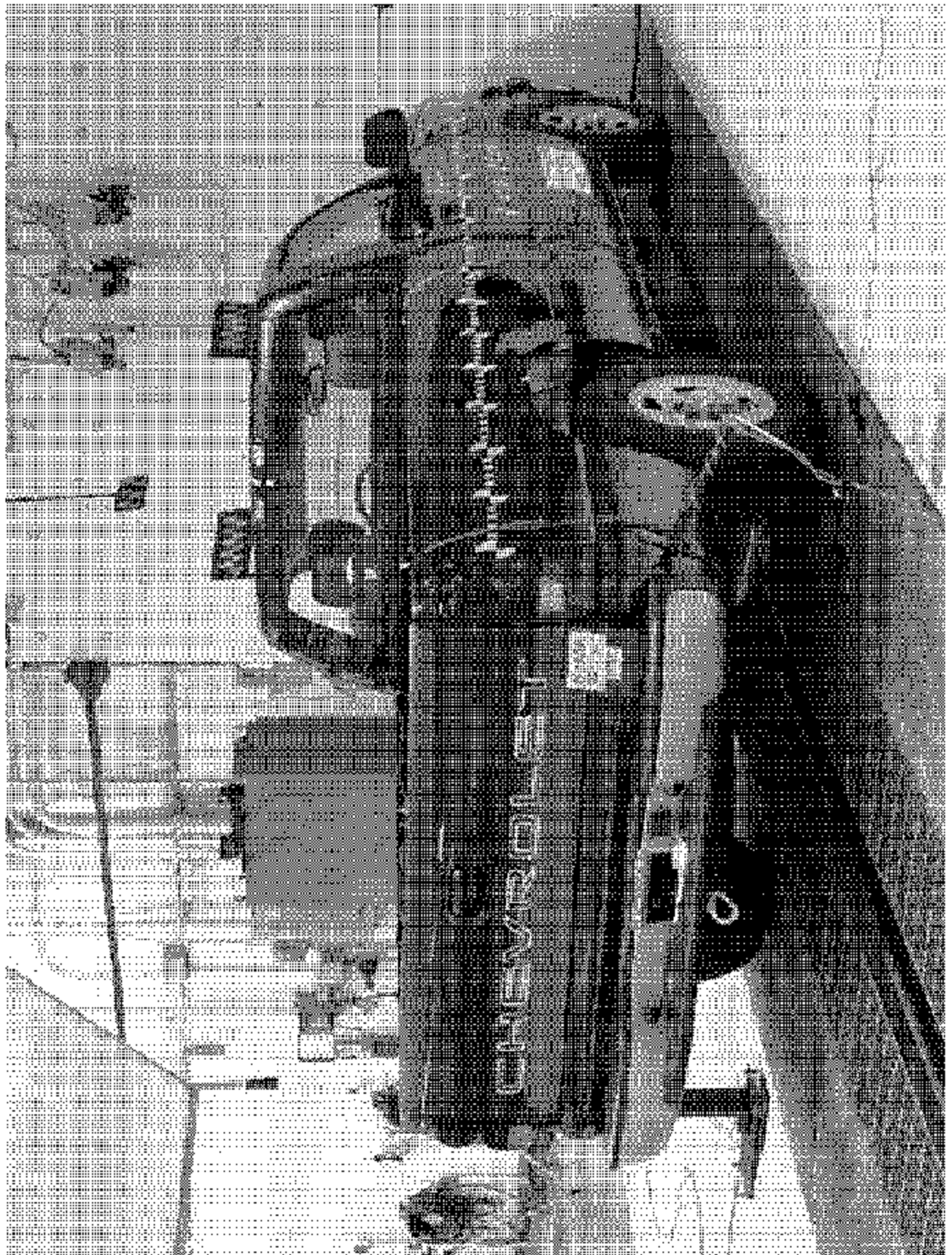


Image 9 Pre-Test Right Rear Three-Quarter View

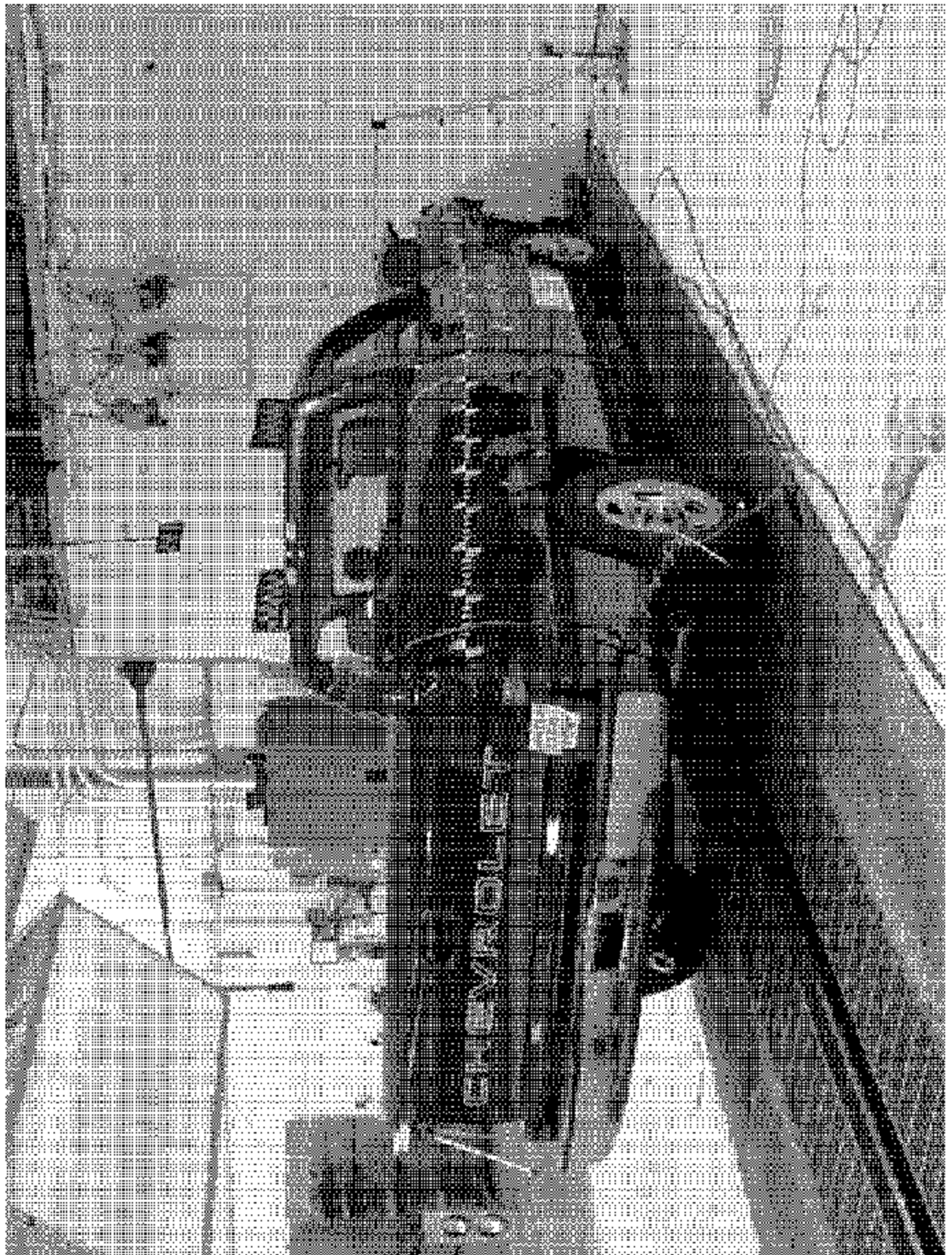


Image 10 Post-Test Right Rear Three-Quarter View

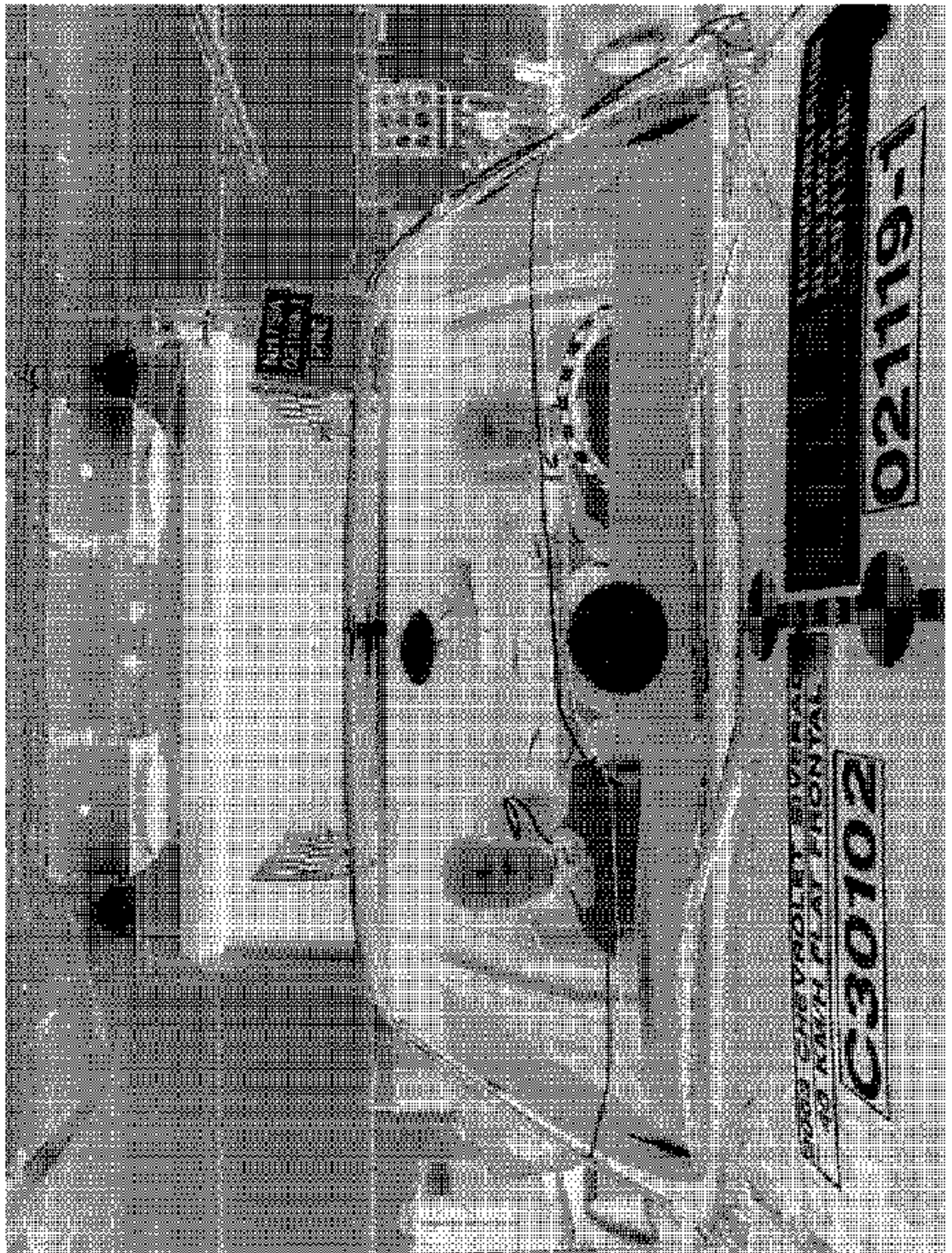


Image 11 Pre-Test Windshield View

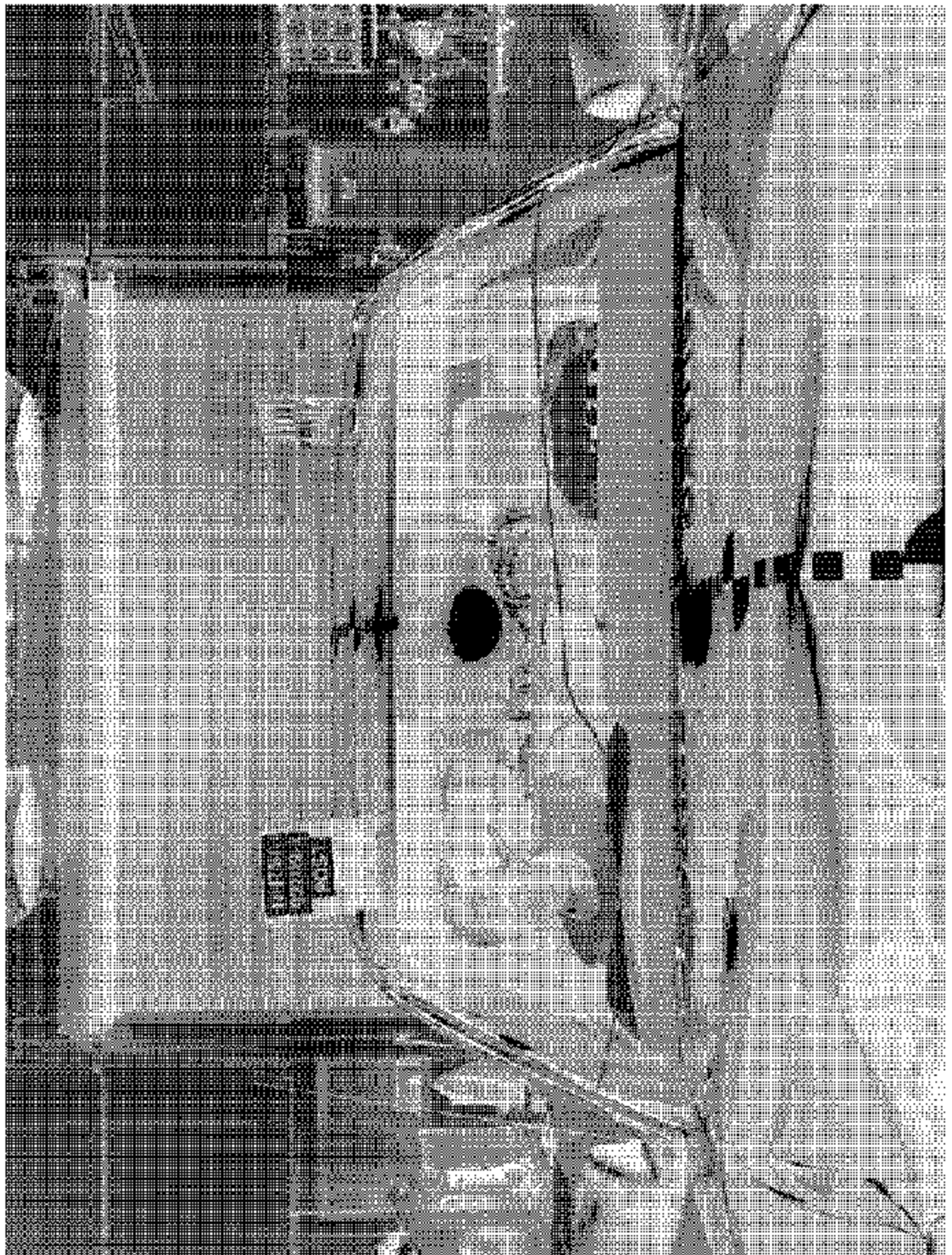


Image 12 Post-Test Windshield View

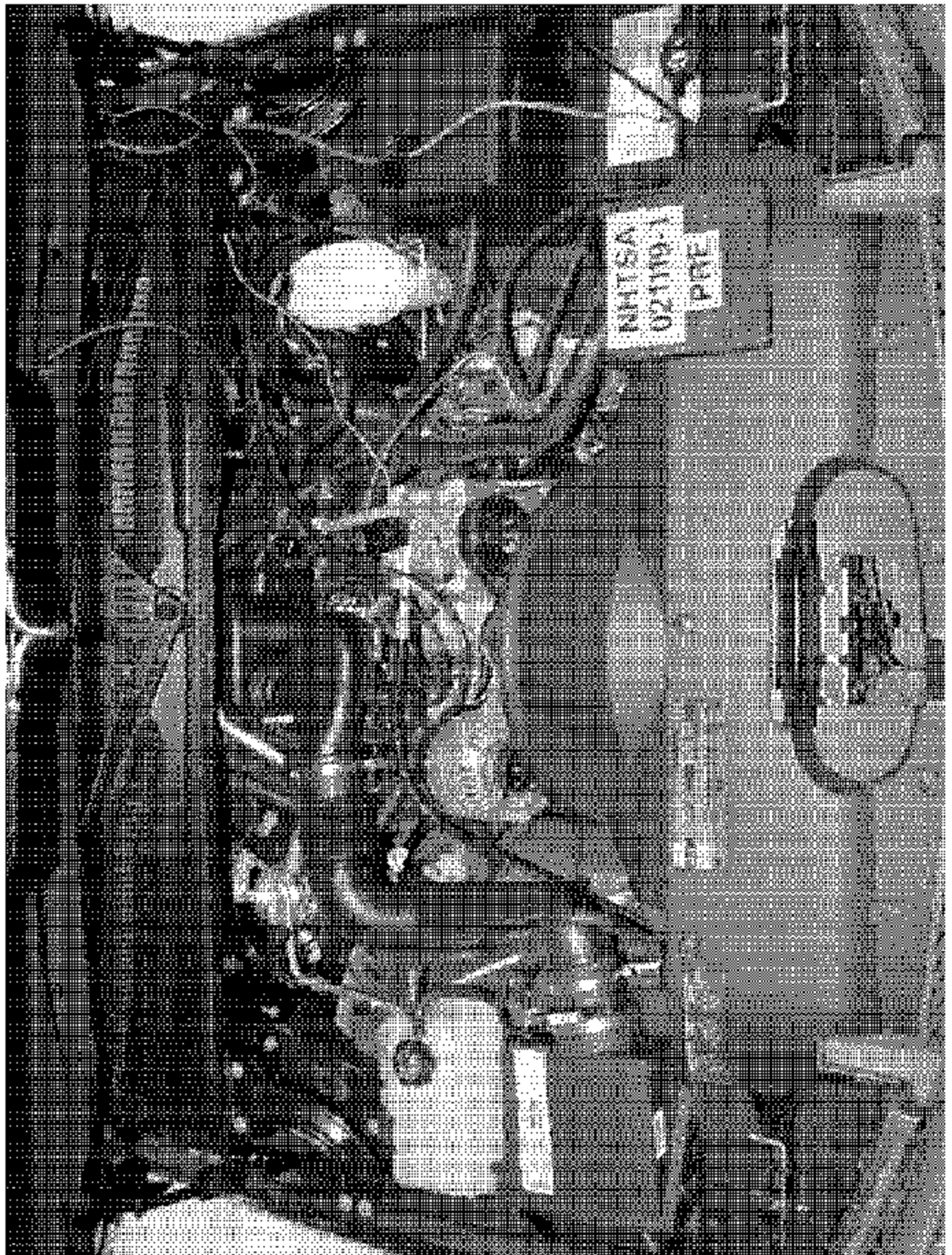


Image 13 Pre-Test Engine Compartment View

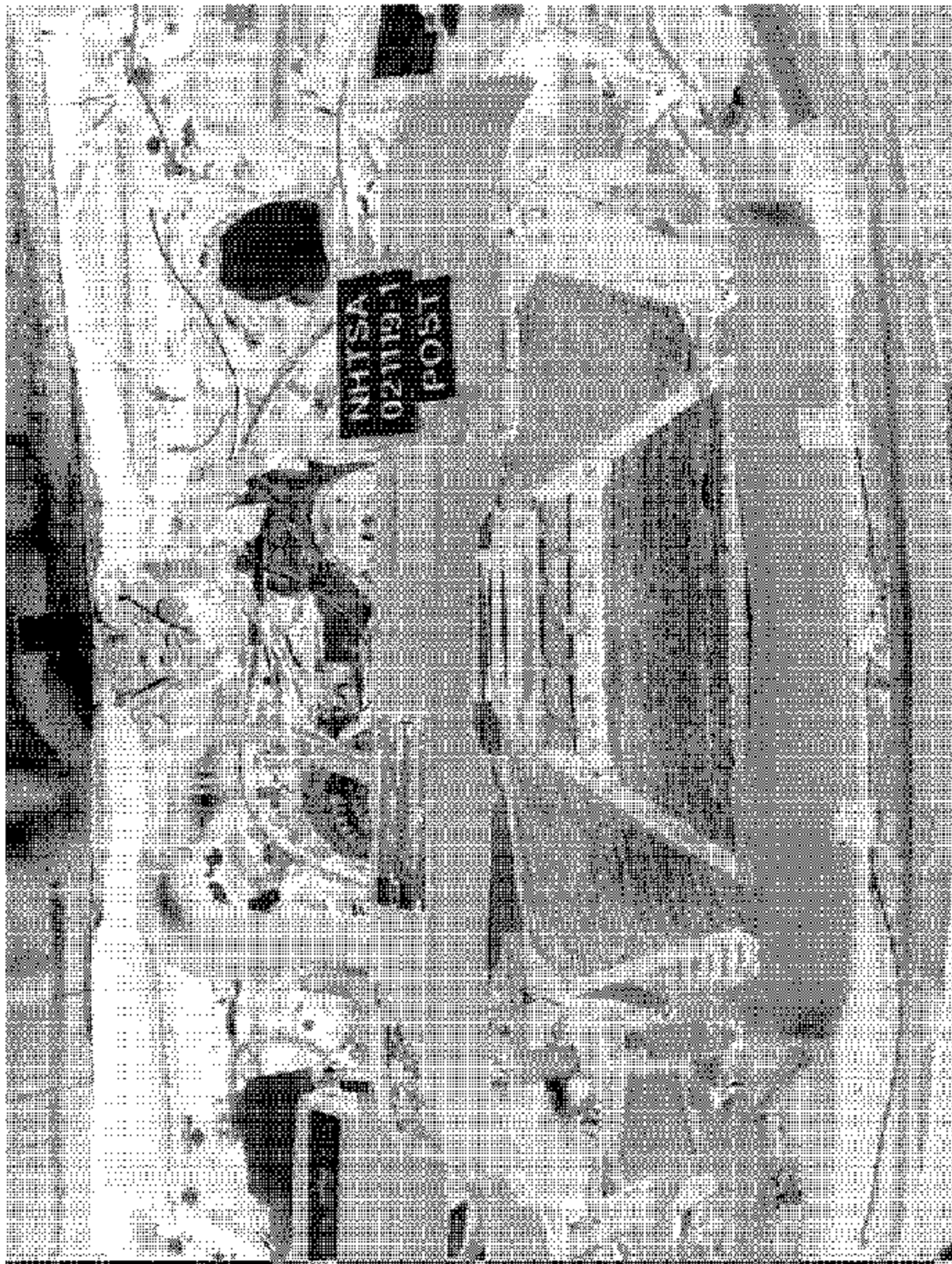


Image 14 Post-Test Engine Compartment View

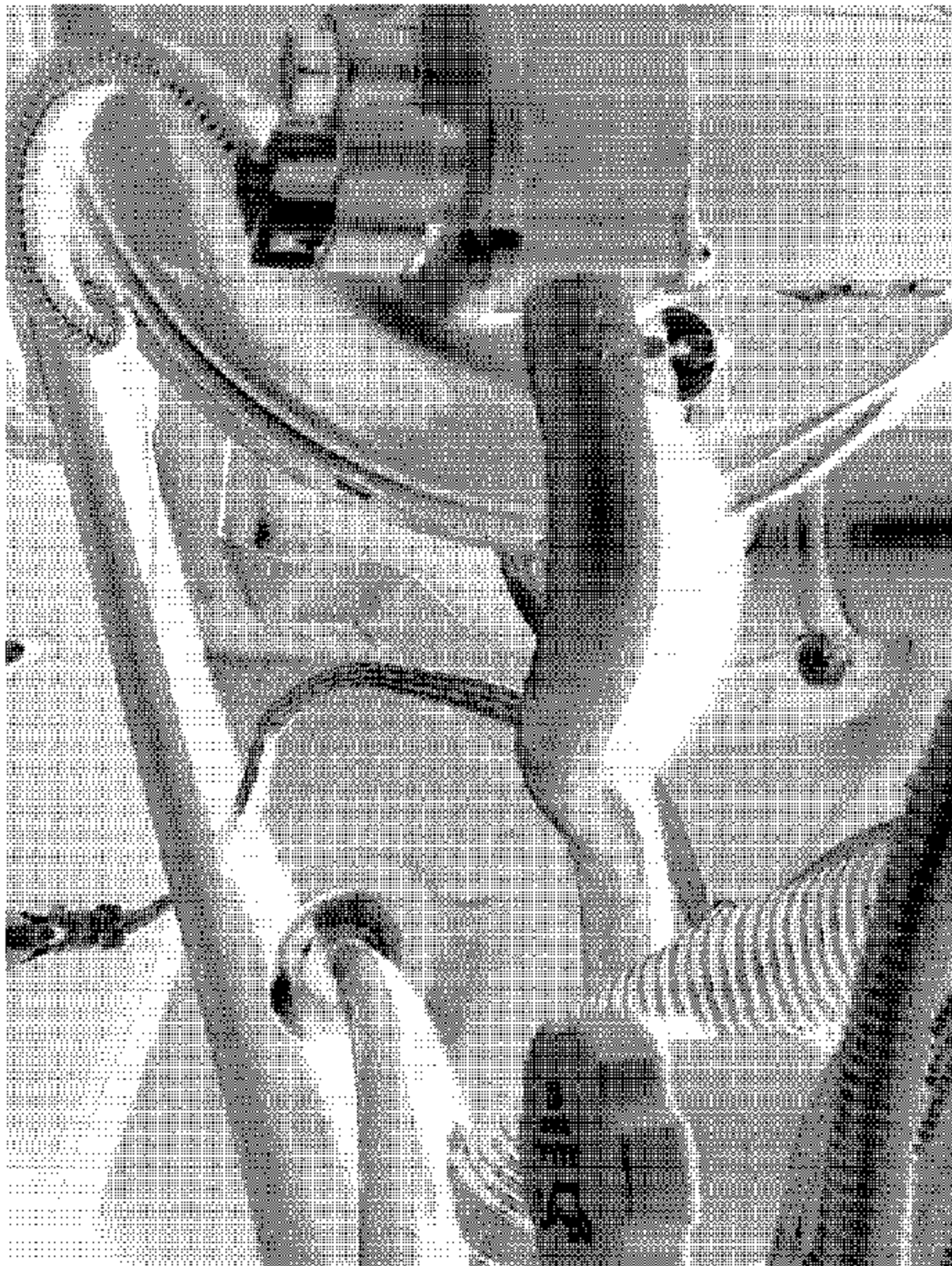


Image 15 Pre-Test Steering Column and Firewall - Under Hood View

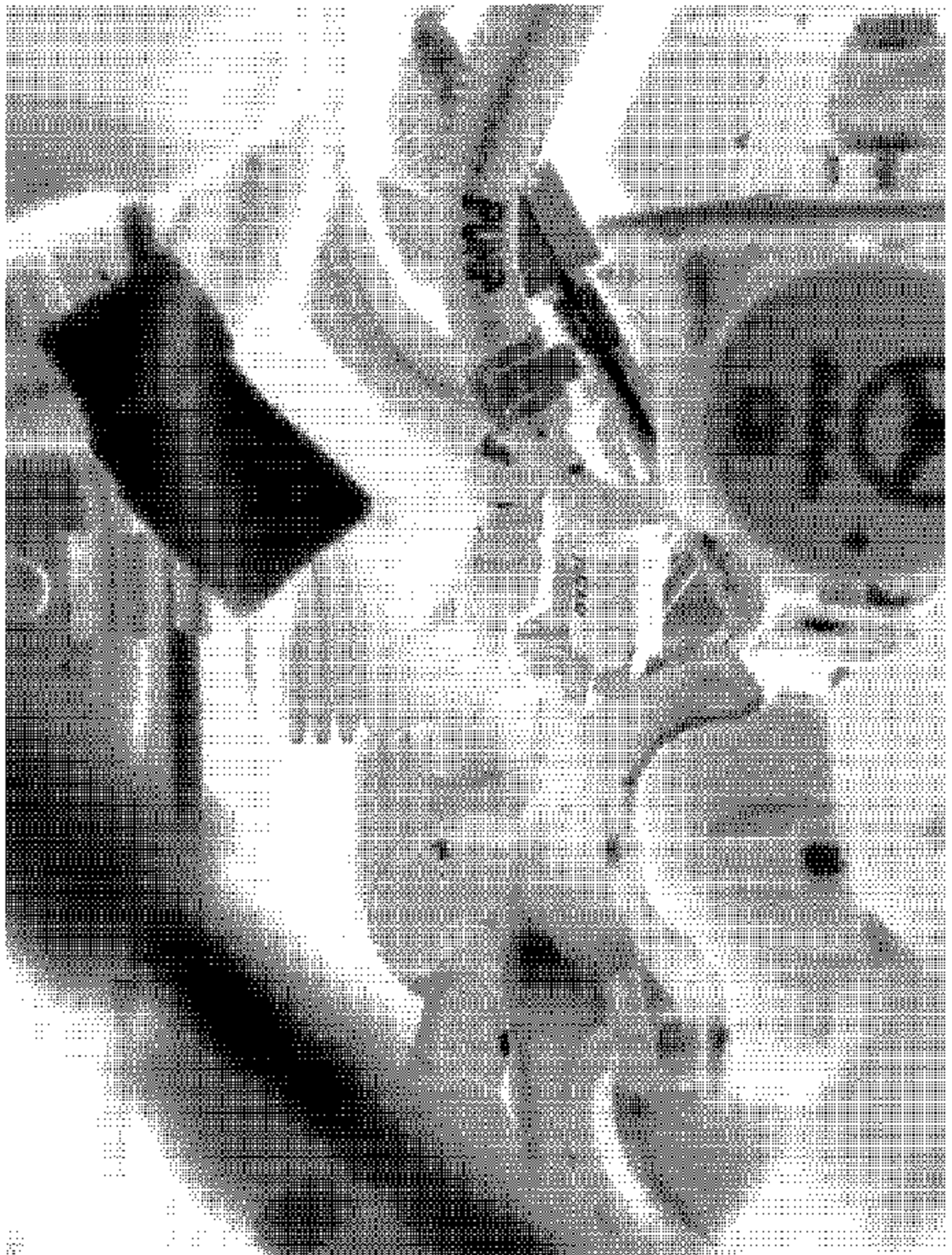


Image 16 Post-Test Steering Column and Firewall - Under Hood View



Image 17 Pre-Test Steering Column and Steering Box View

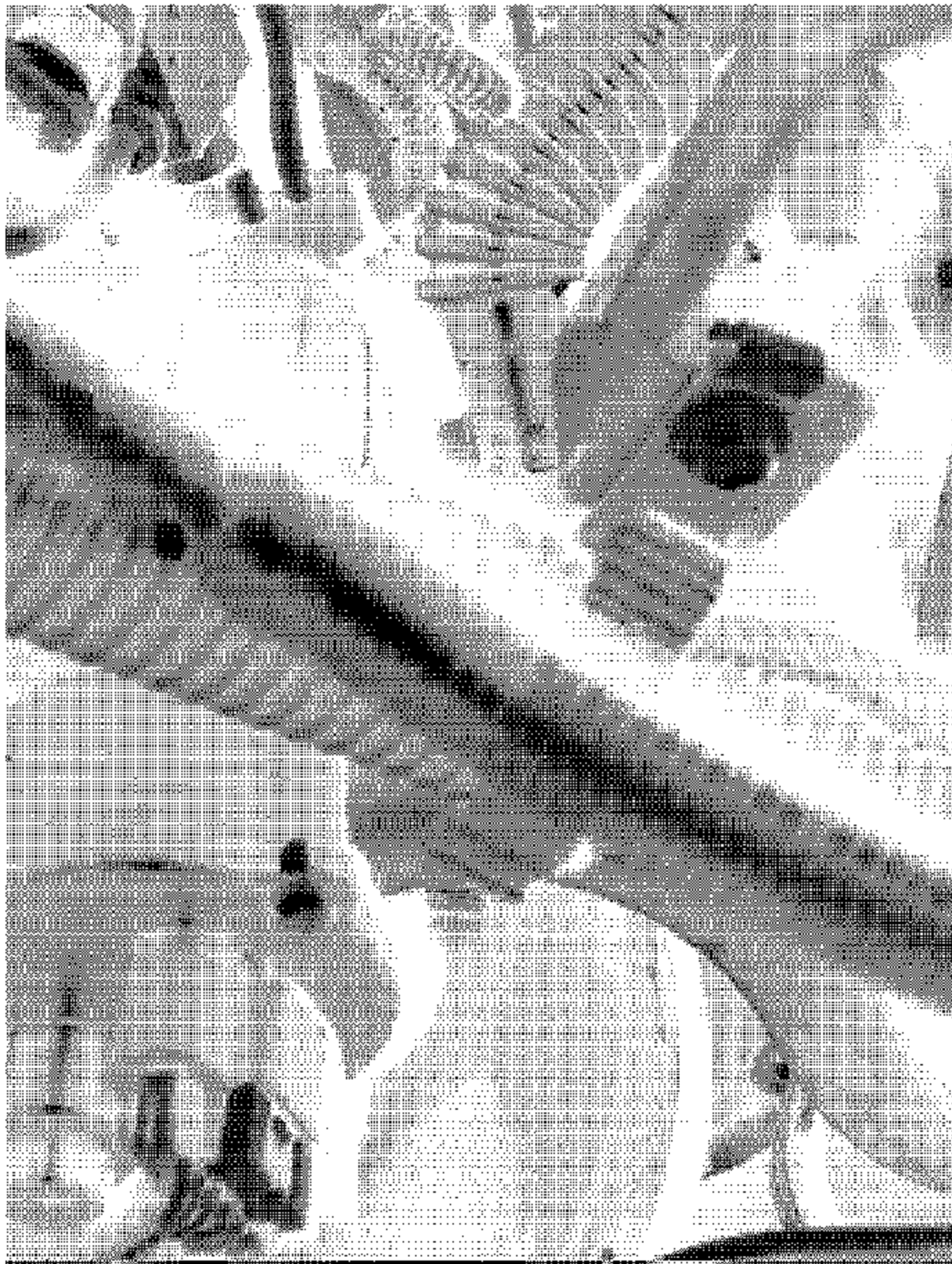


Image 18 Post-Test Steering Column and Steering Box View



Image 19 Pre-Test Steering Column and Firewall - Interior View



Image 20 Post-Test Steering Column and Firewall - Interior View

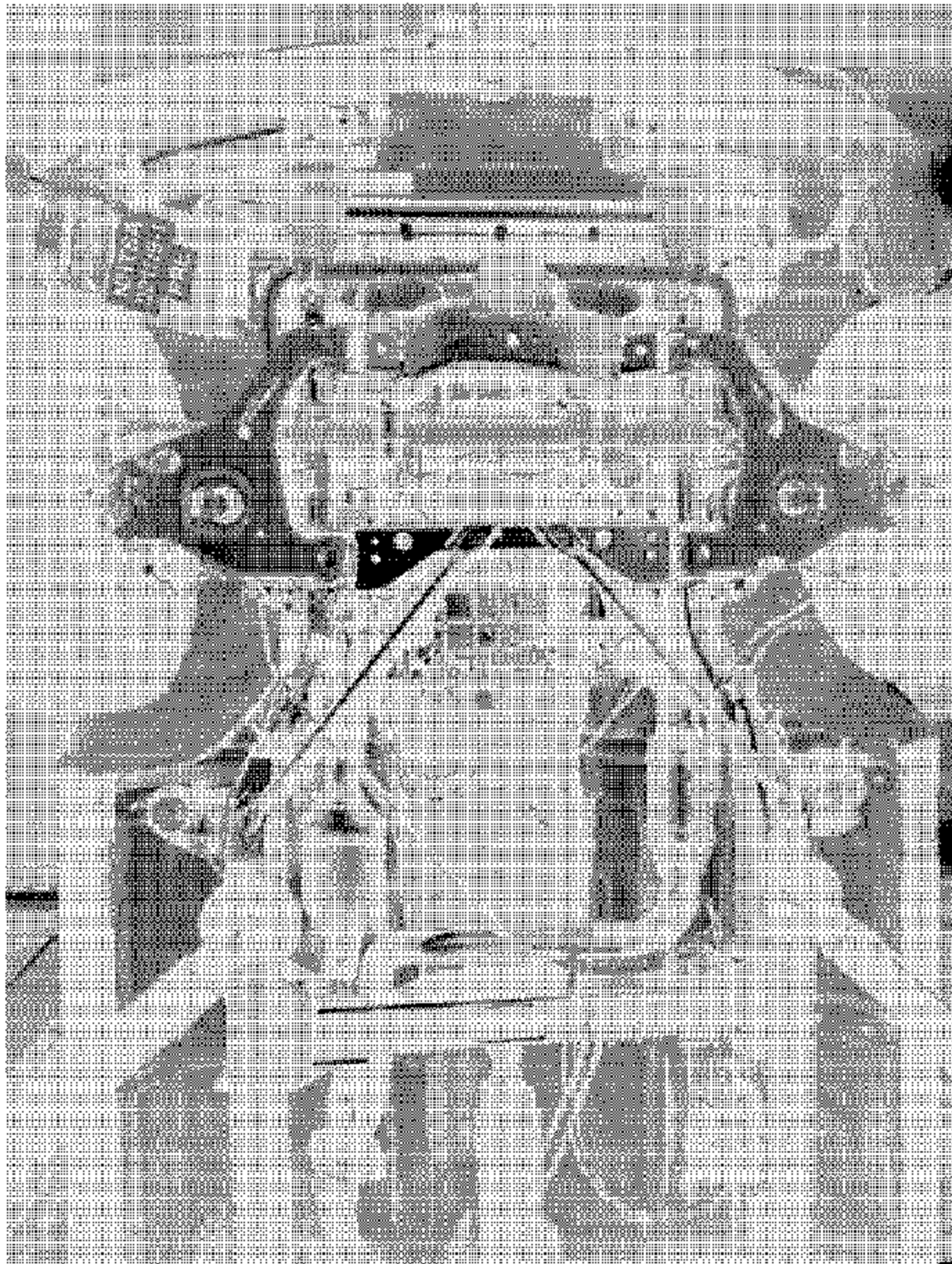


Image 21 Pre-Test Front Underbody View

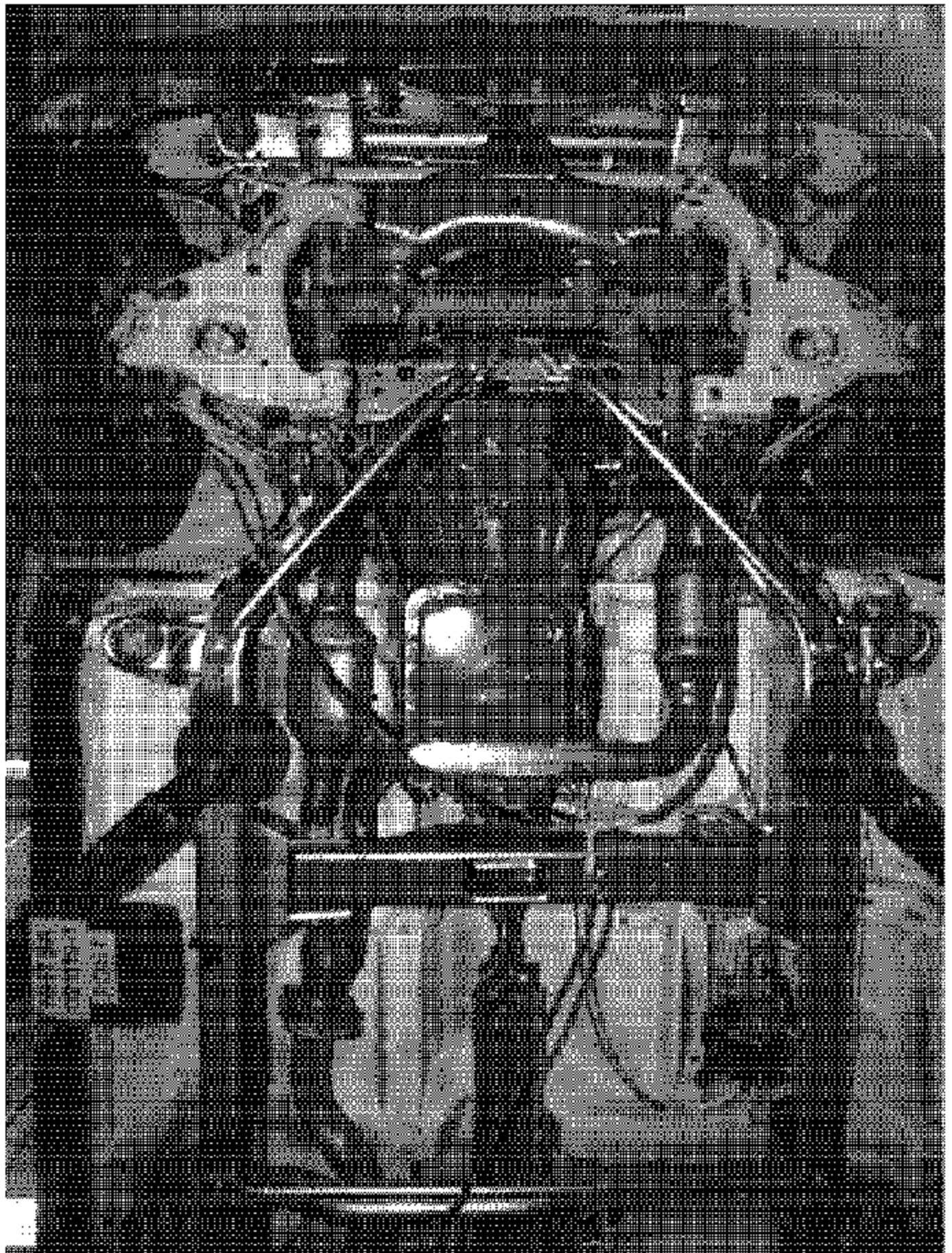


Image 22 Post-Test Front Underbody View

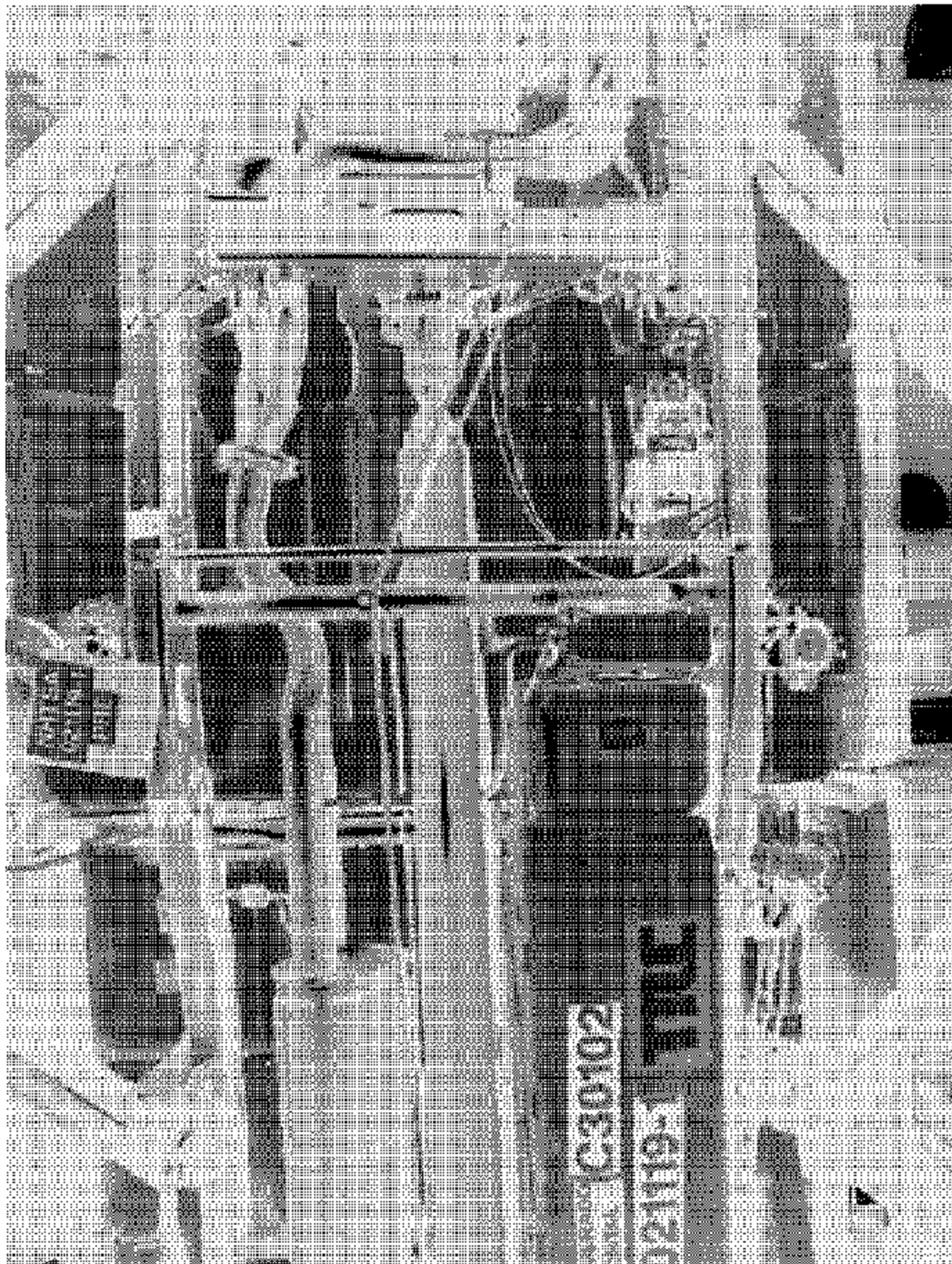


Image 23 Pre-Test Mid Underbody View

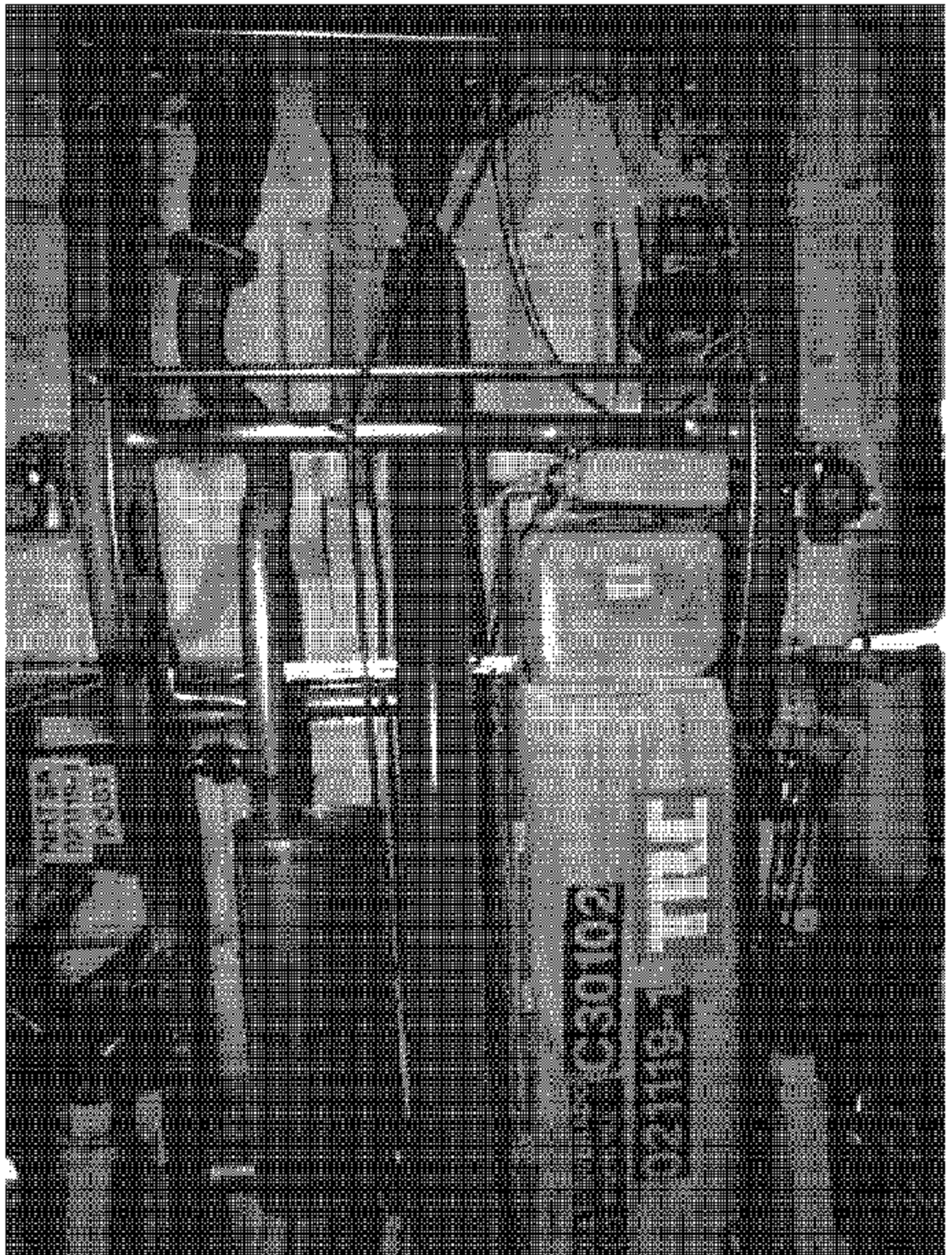


Image 24 Post-Test Mid Underbody View

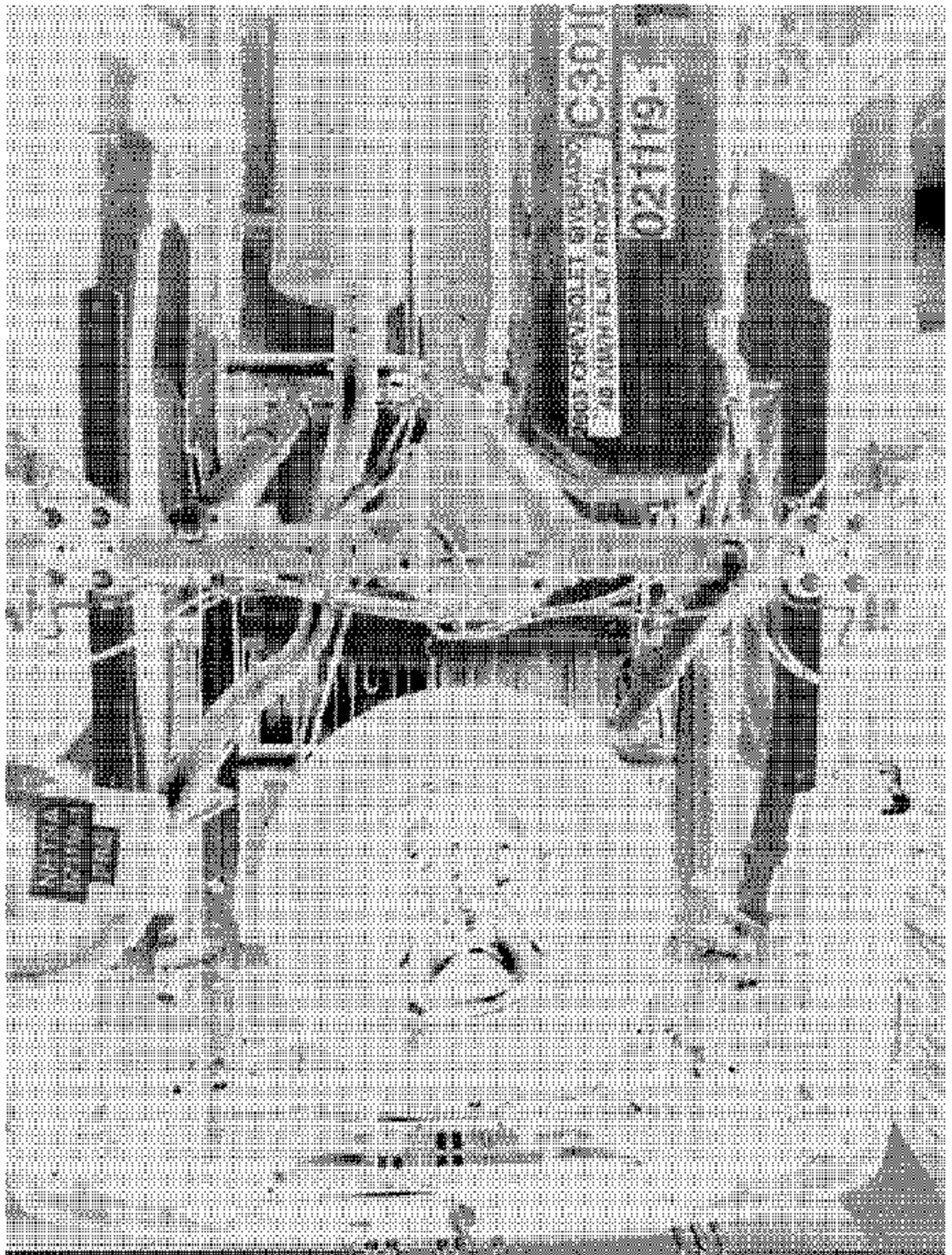


Image 25 Pre-Test Rear Underbody View

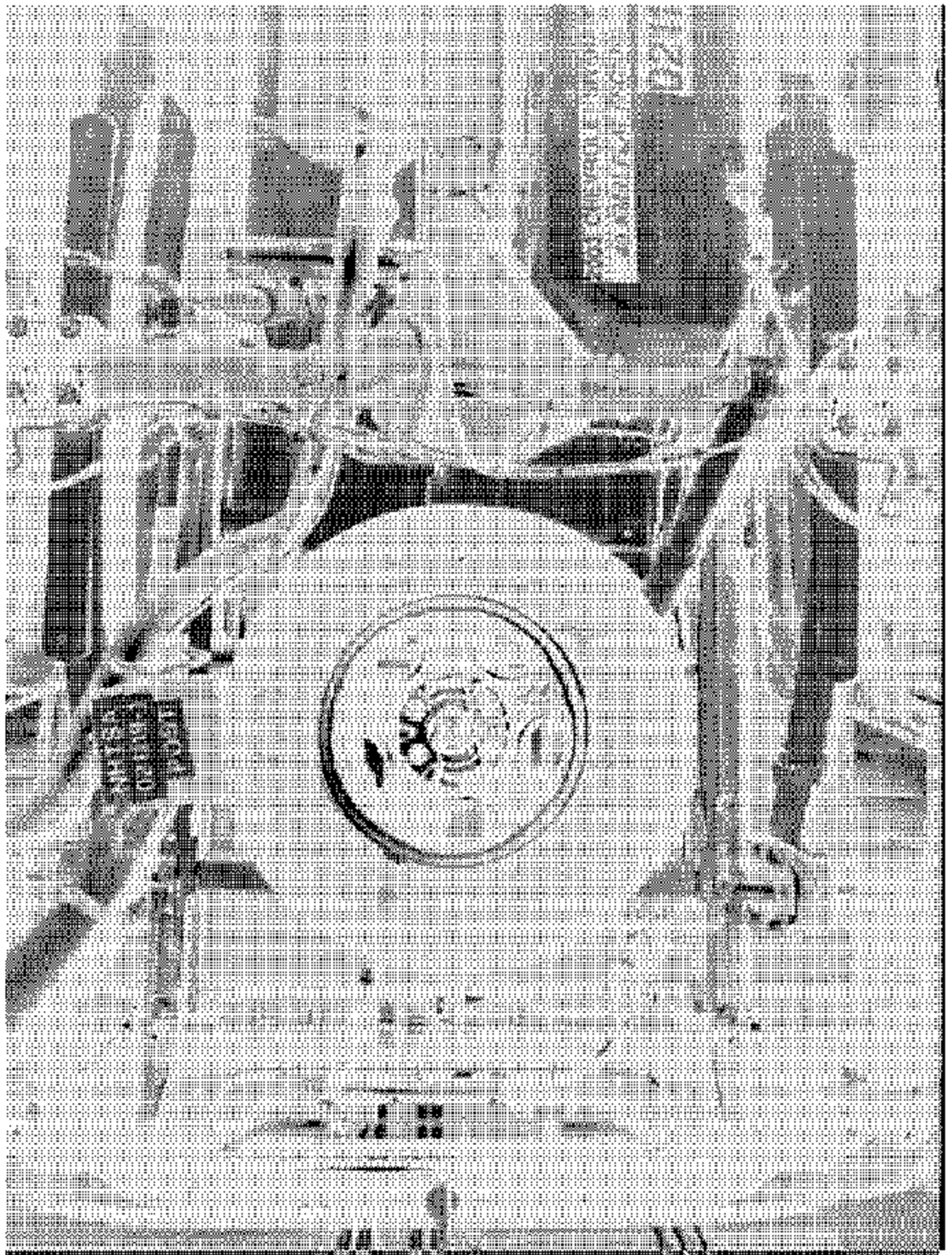


Image 26 Post-Test Rear Underbody View

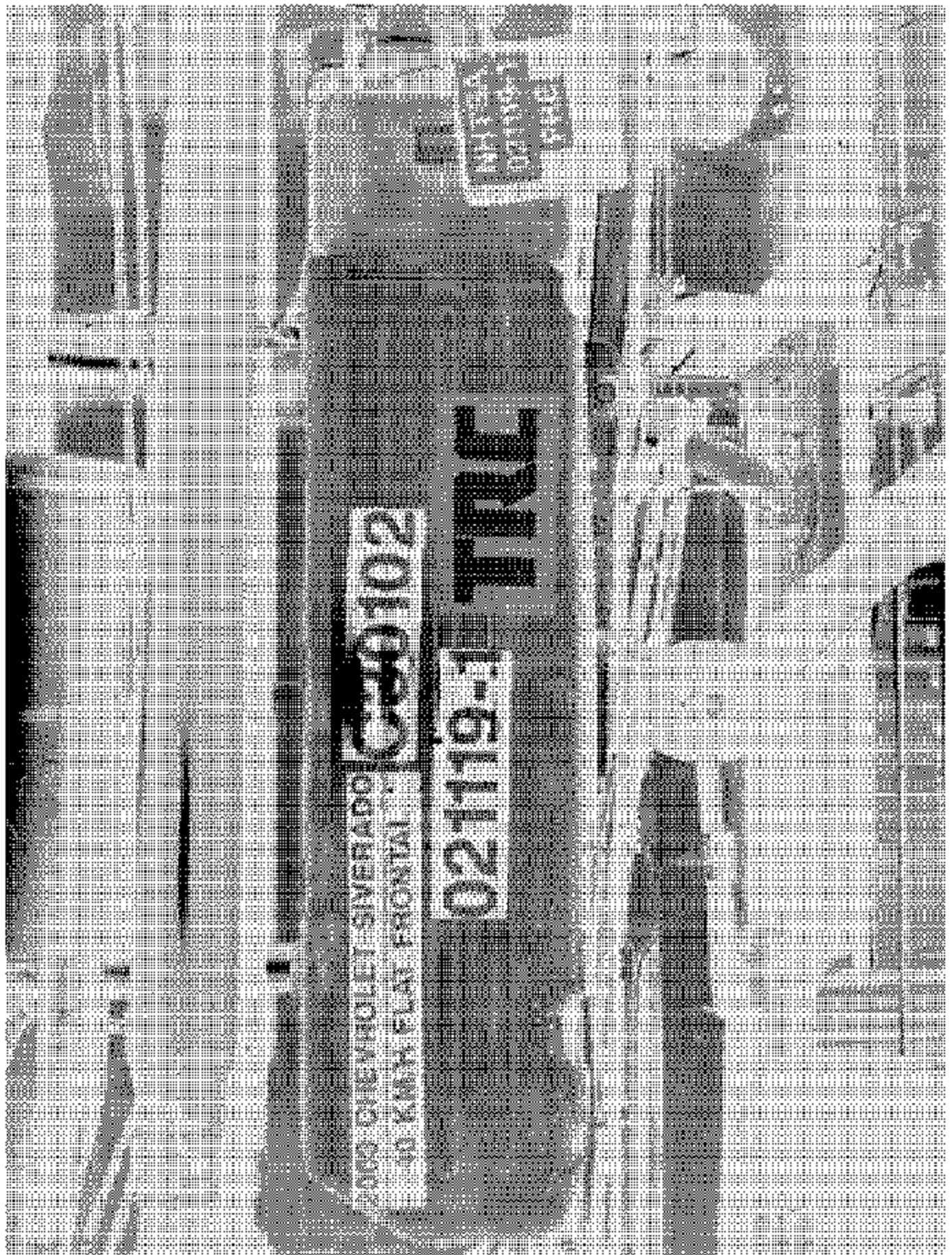


Image 27 Pre-Test Fuel Tank View

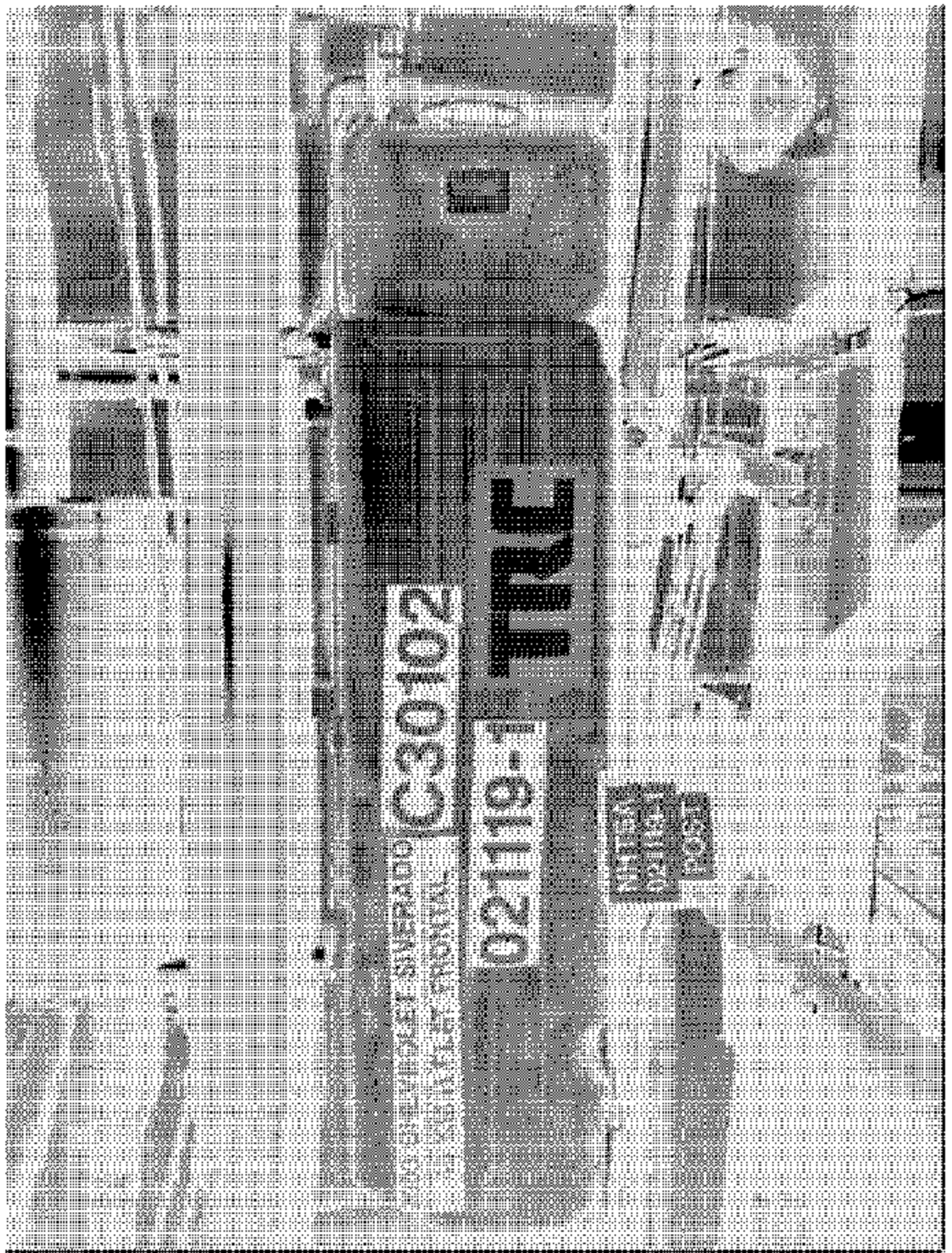


Image 28 Post-Test Fuel Tank View

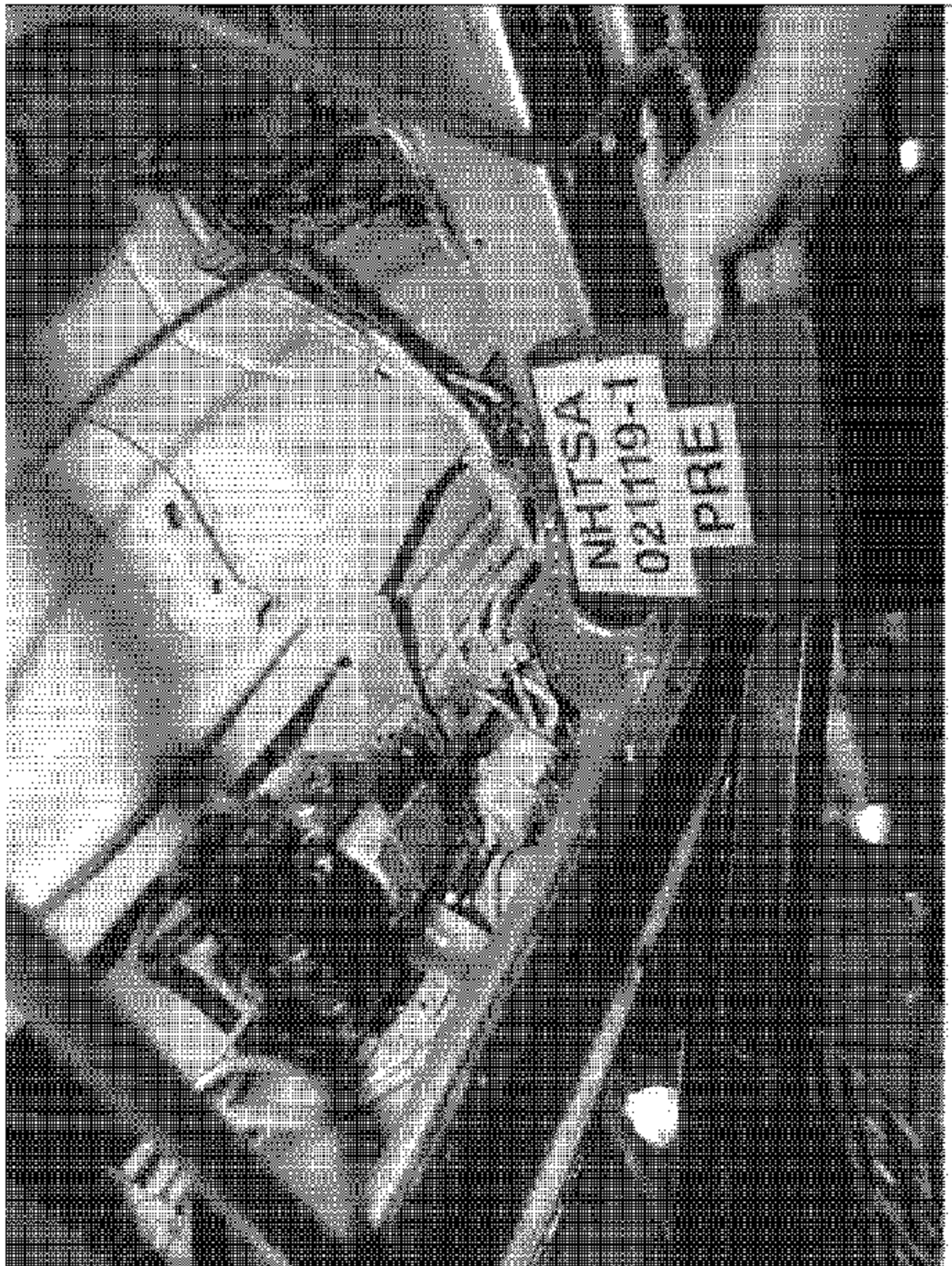


Image 29 Pre-Test Fuel Lines and Filter View

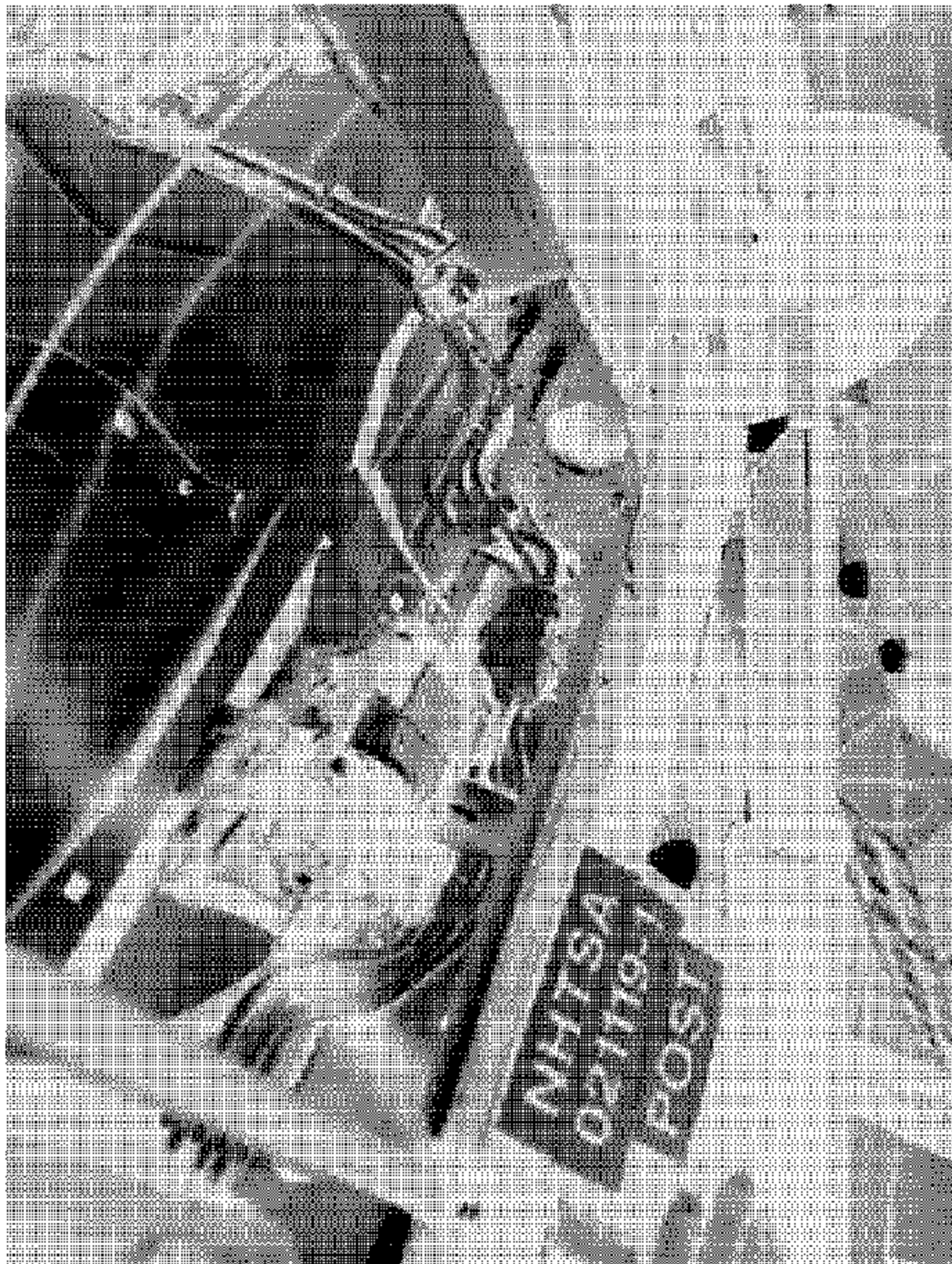


Image 30 Post-Test Fuel Lines and Filter View

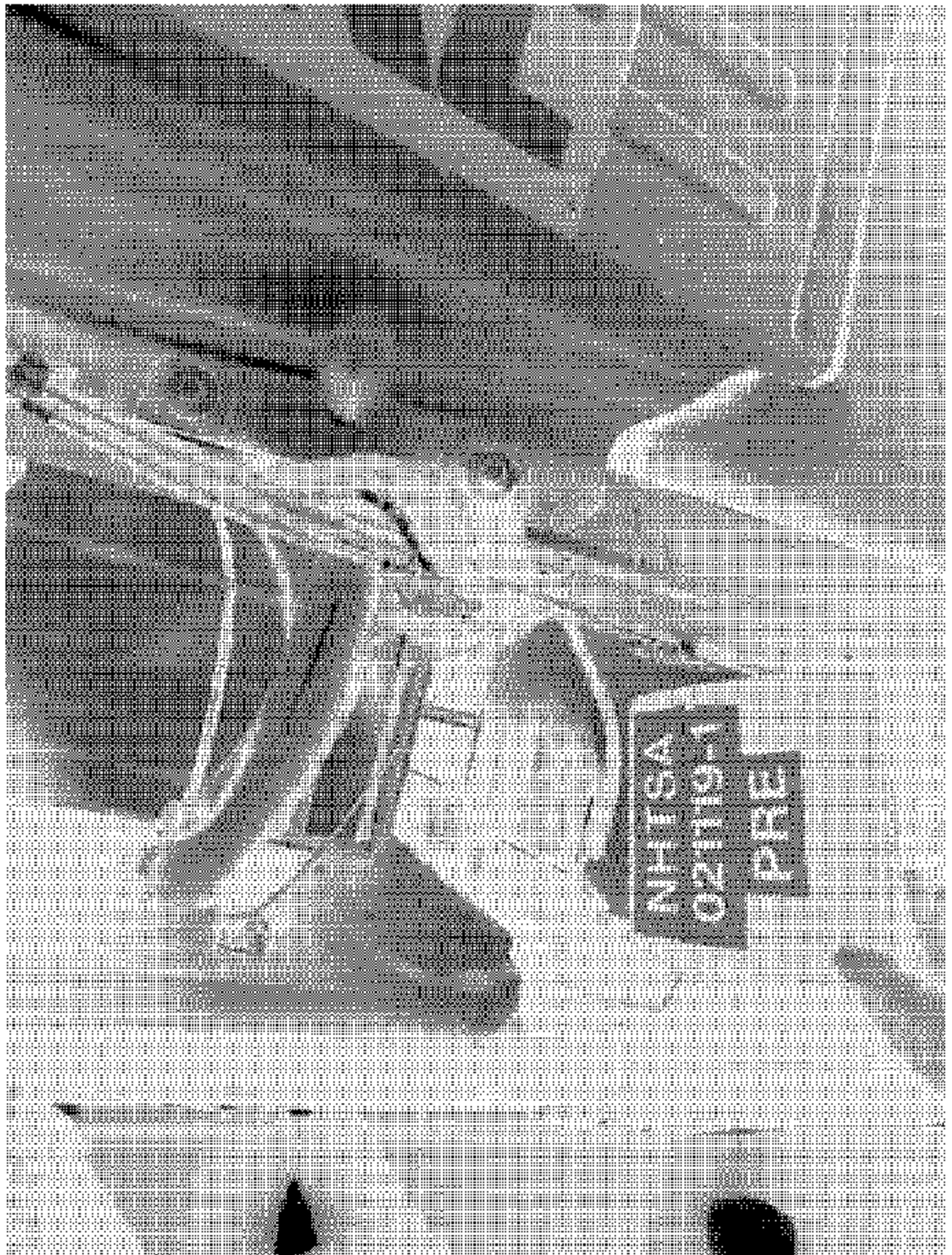


Image 31 Pre-Test Fuel Filler Neck View

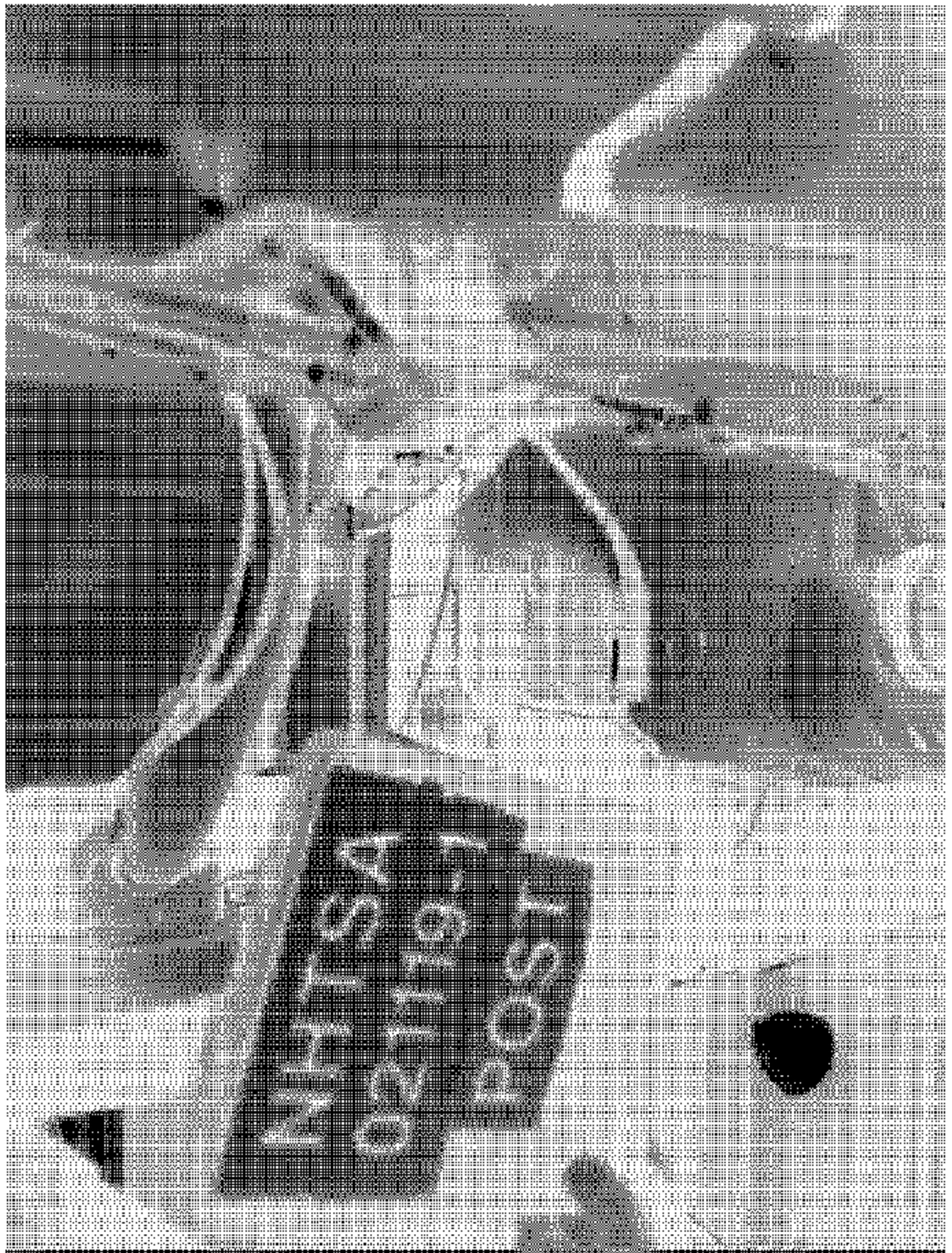


Image 32 Post-Test Fuel Filler Neck View

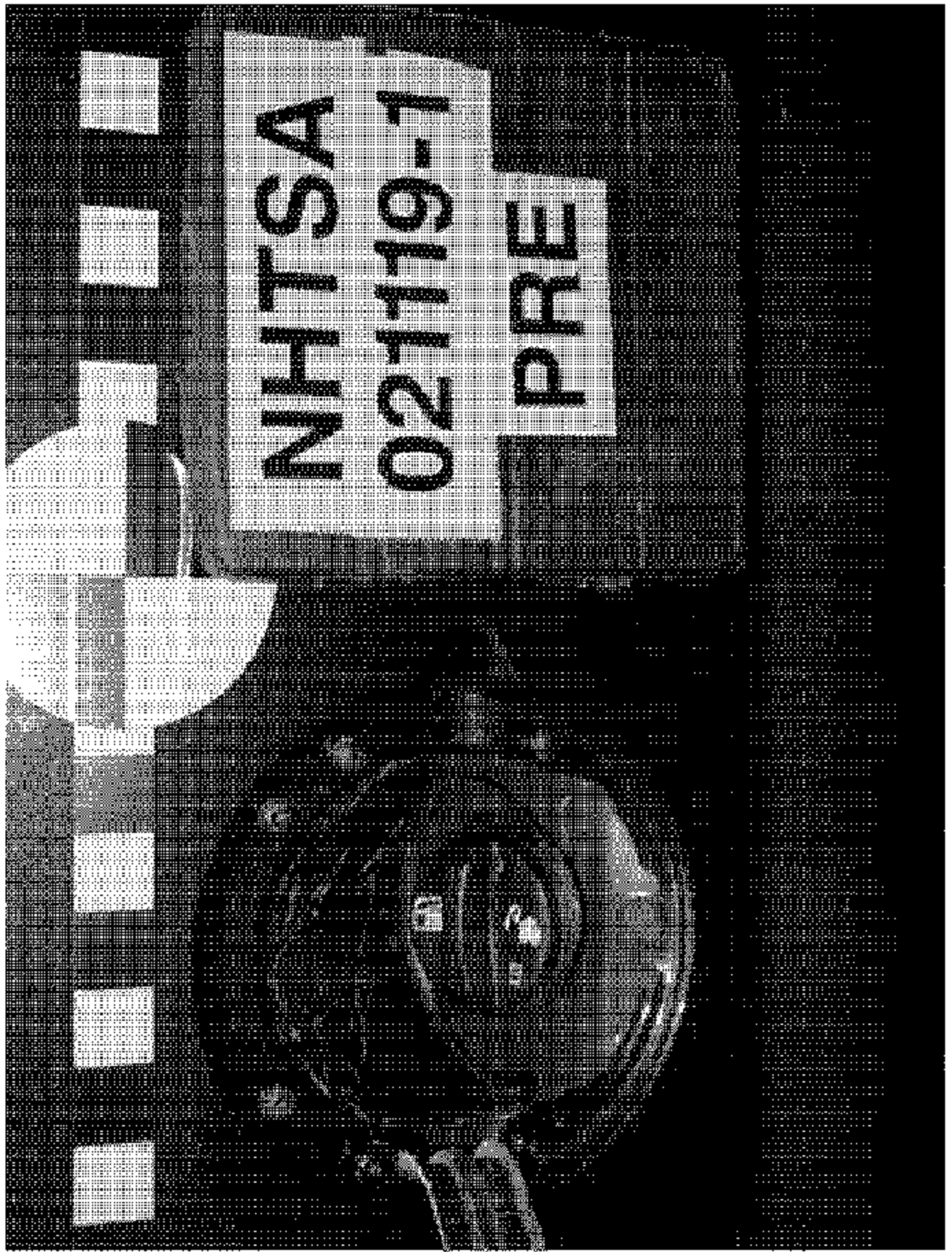


Image 33 Pre-Test Fuel Filler Cap View

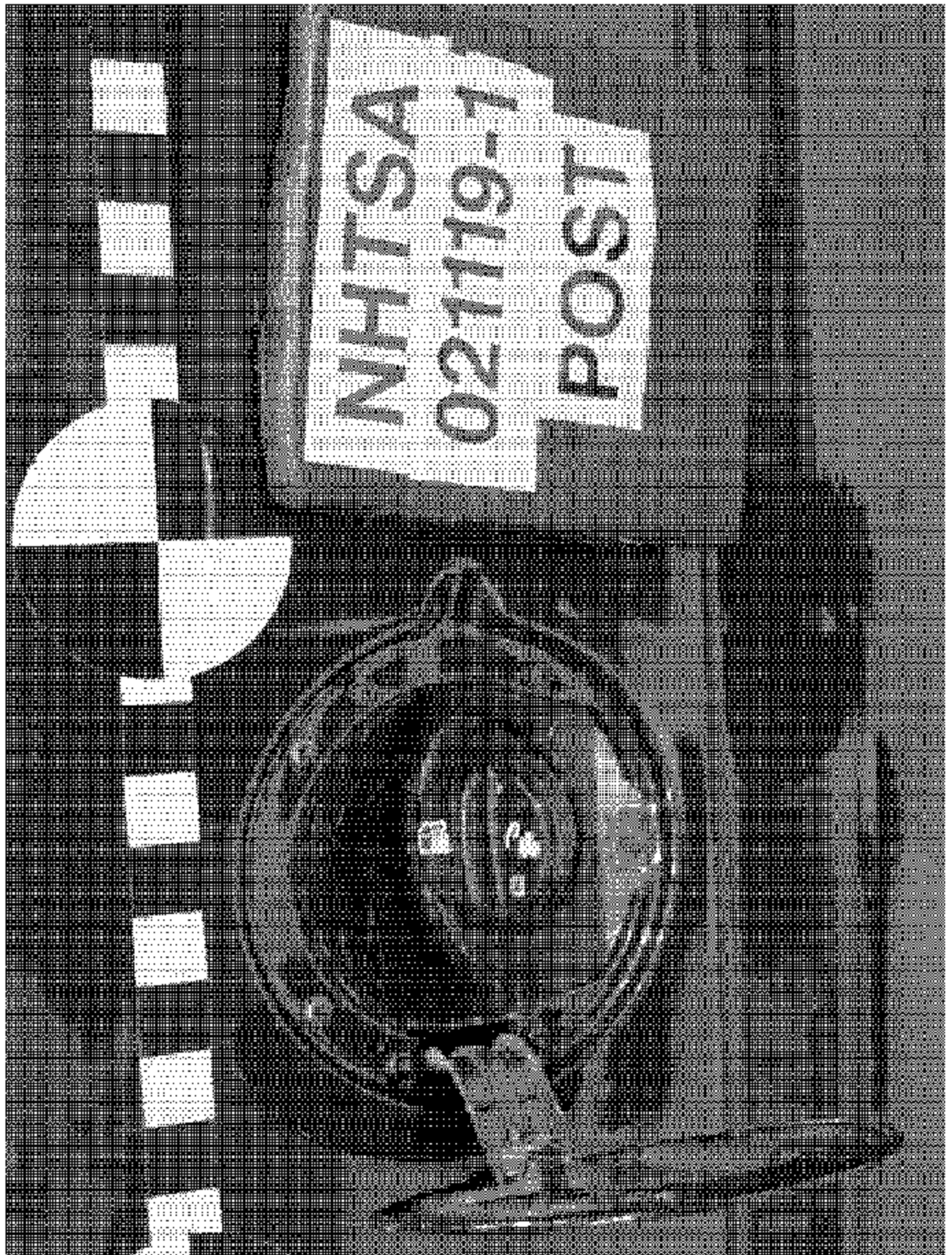


Image 34 Post-Test Fuel Filler Cap View

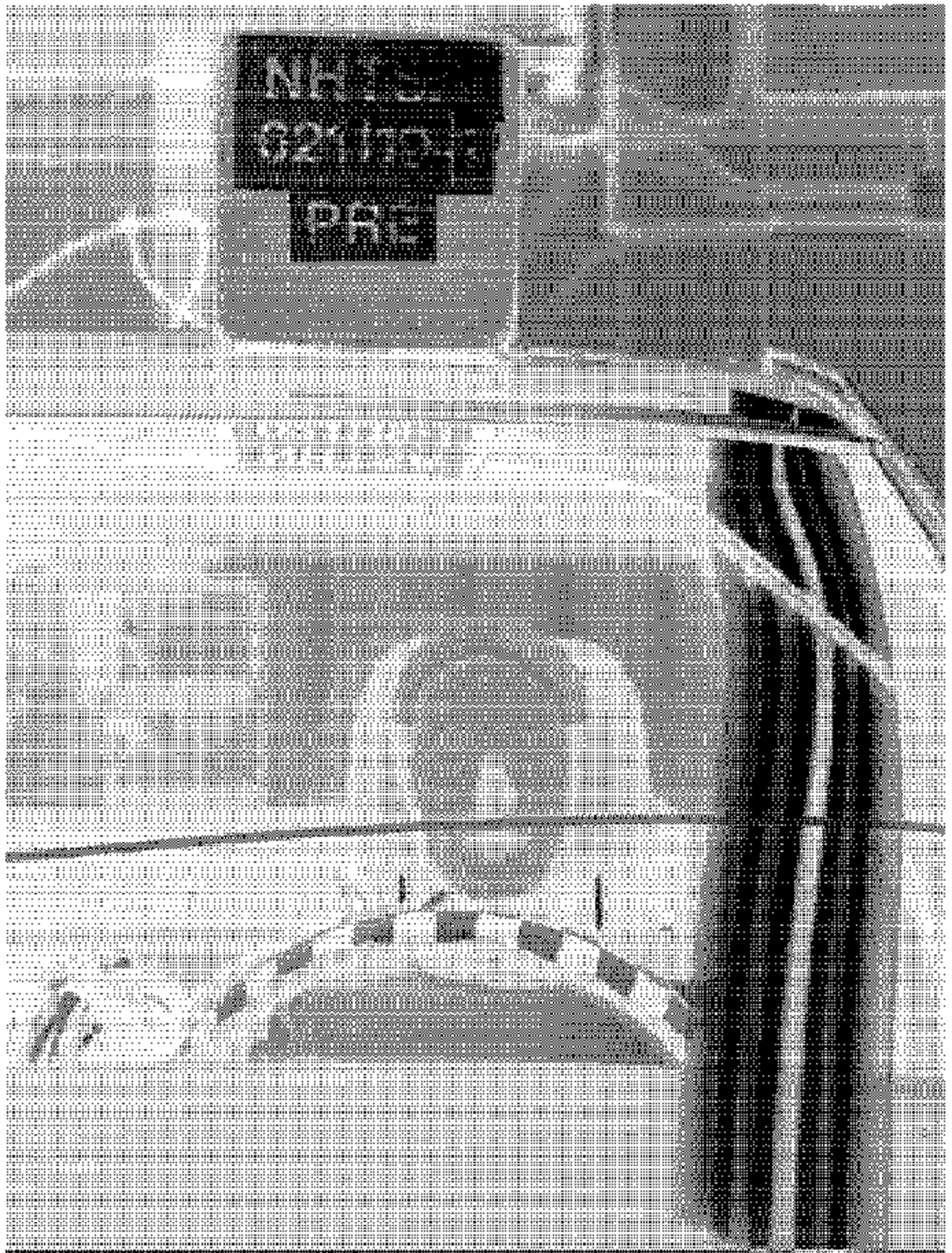


Image 35 Pre-Test Driver Dummy Front View

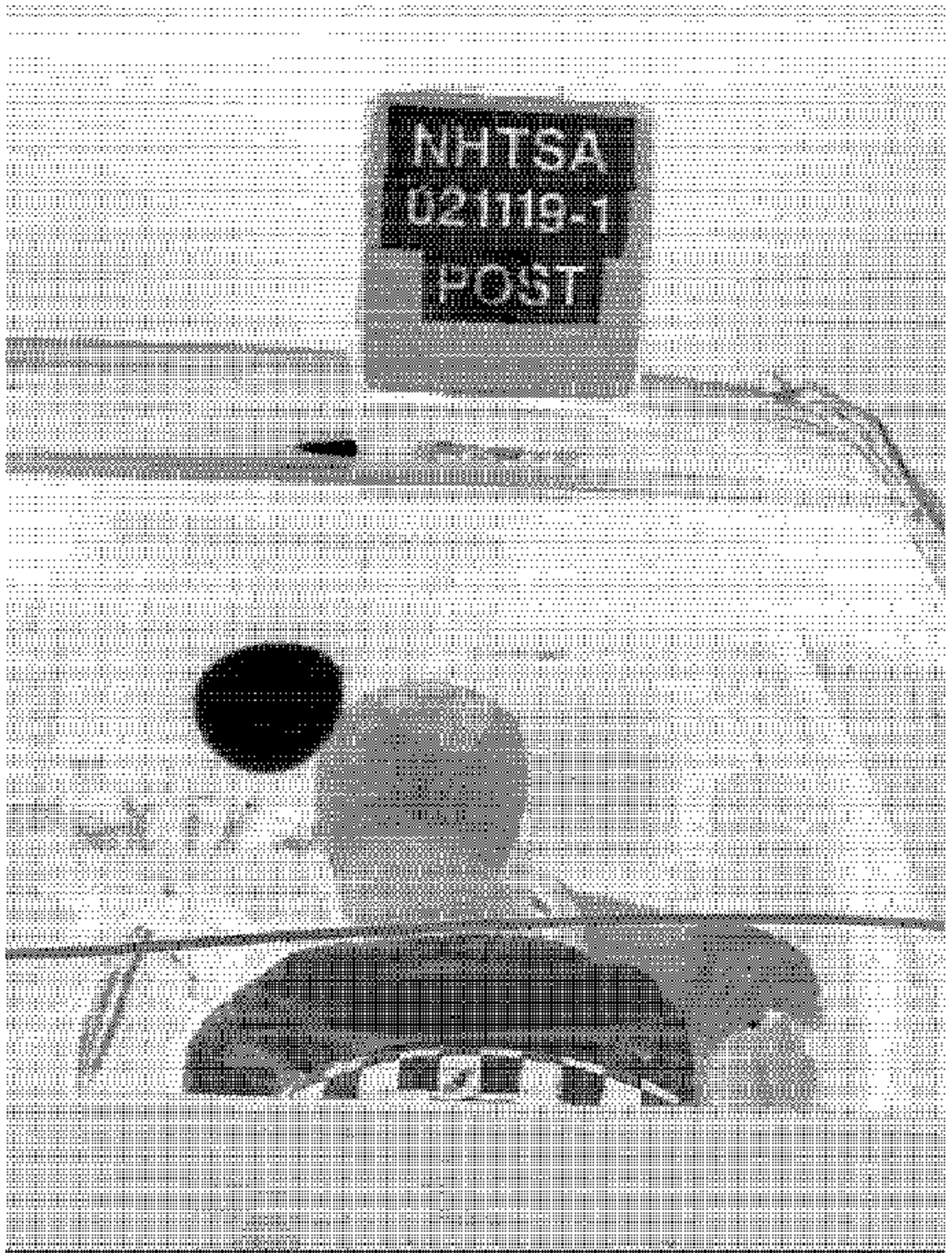


Image 36 Post-Test Driver Dummy Front View

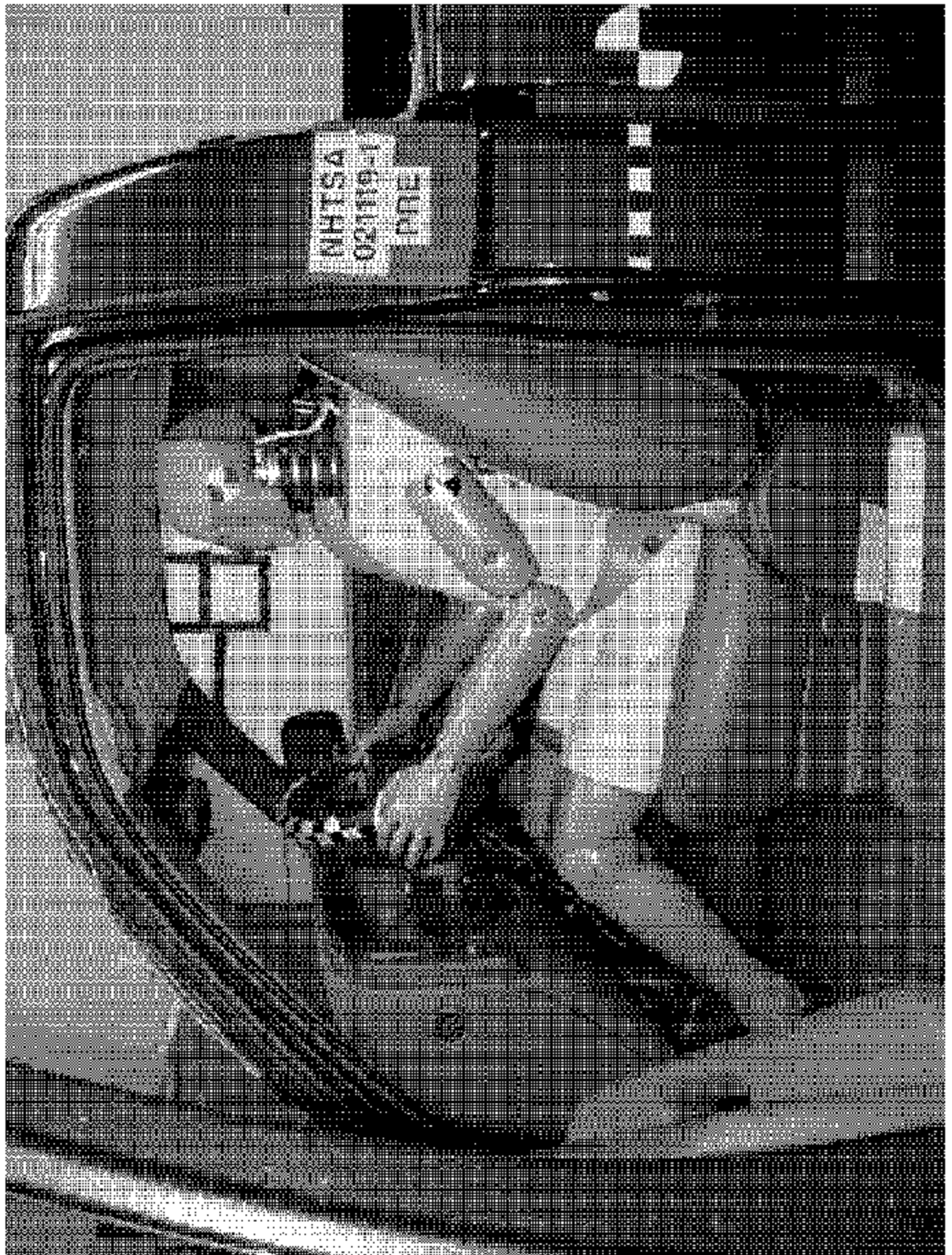


Image 37 Pre-Test Driver Dummy Position View

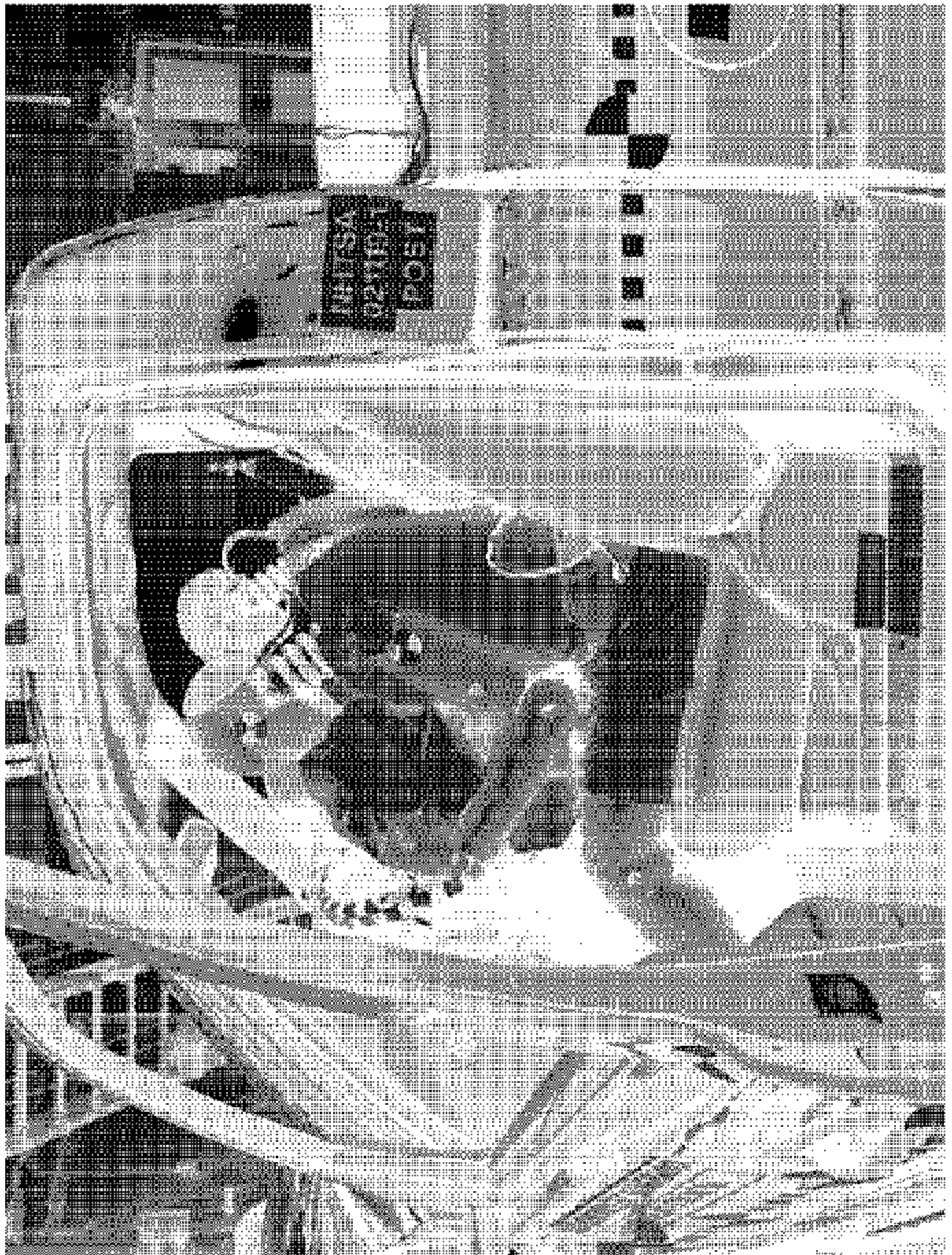


Image 38 Post-Test Driver Dummy Position View

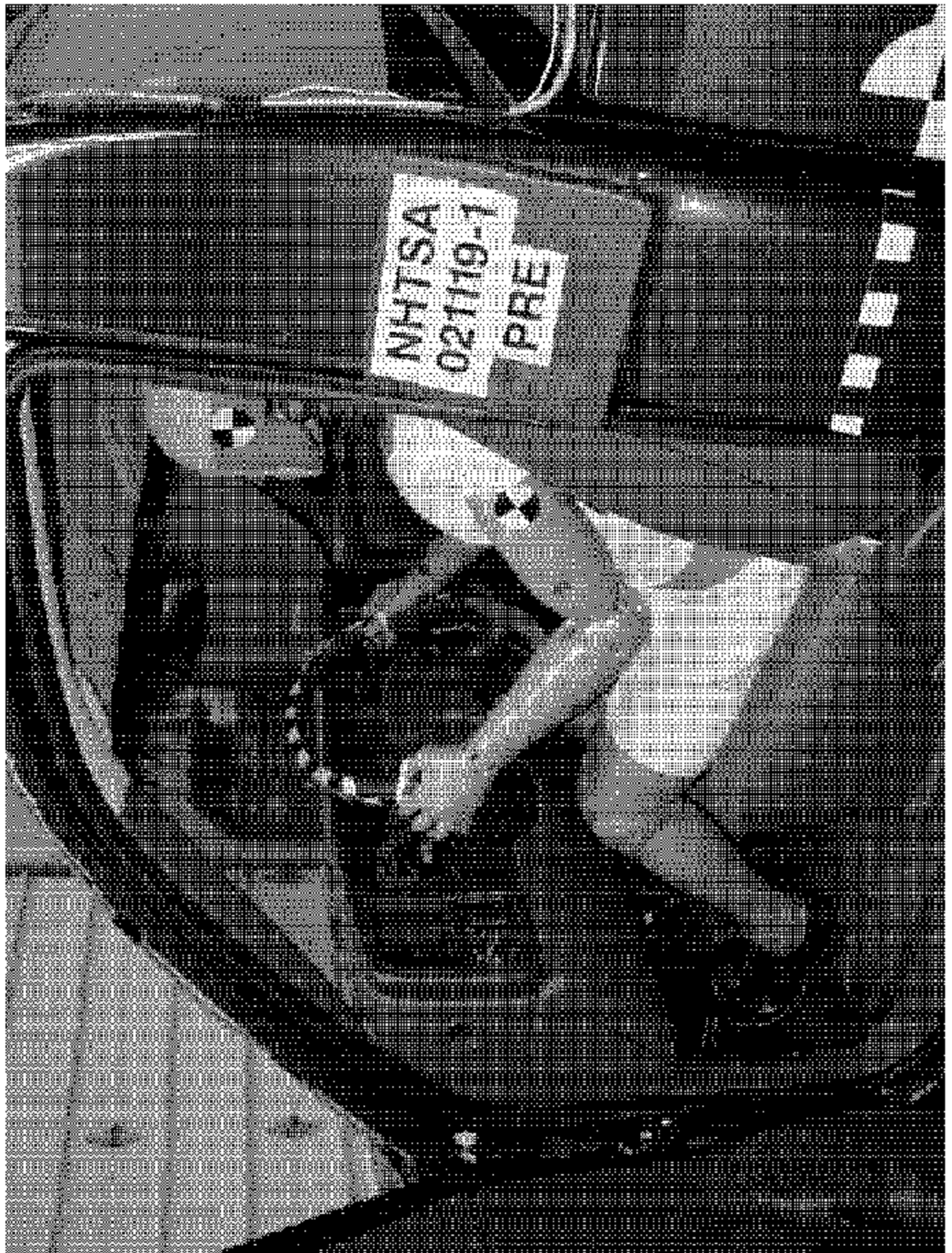


Image 39 Pre-Test Driver Dummy & Vehicle Intrusion View

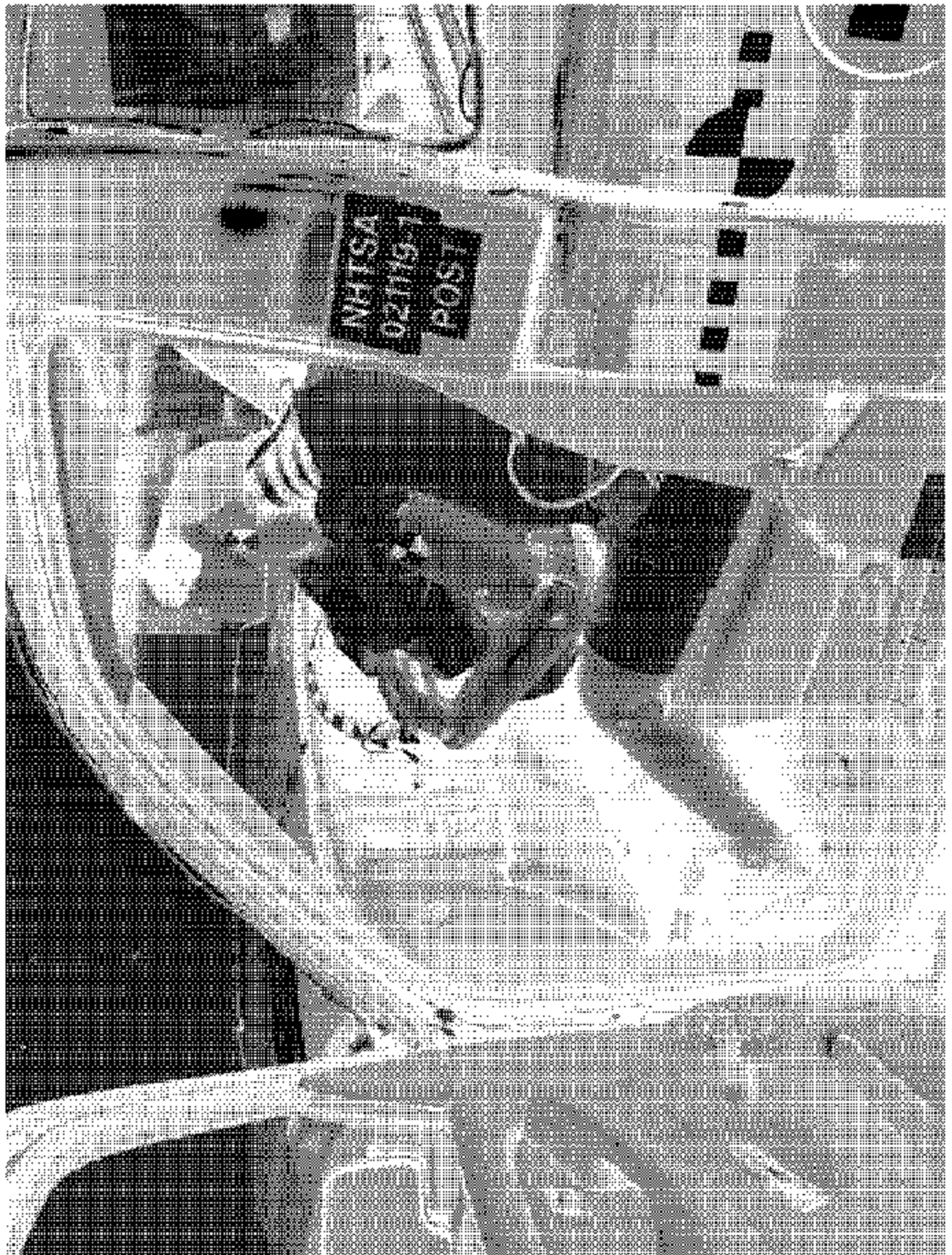


Image 40 Post-Test Driver Dummy & Vehicle Intrusion View



Image 41 Pre-Test Passenger Dummy Front View

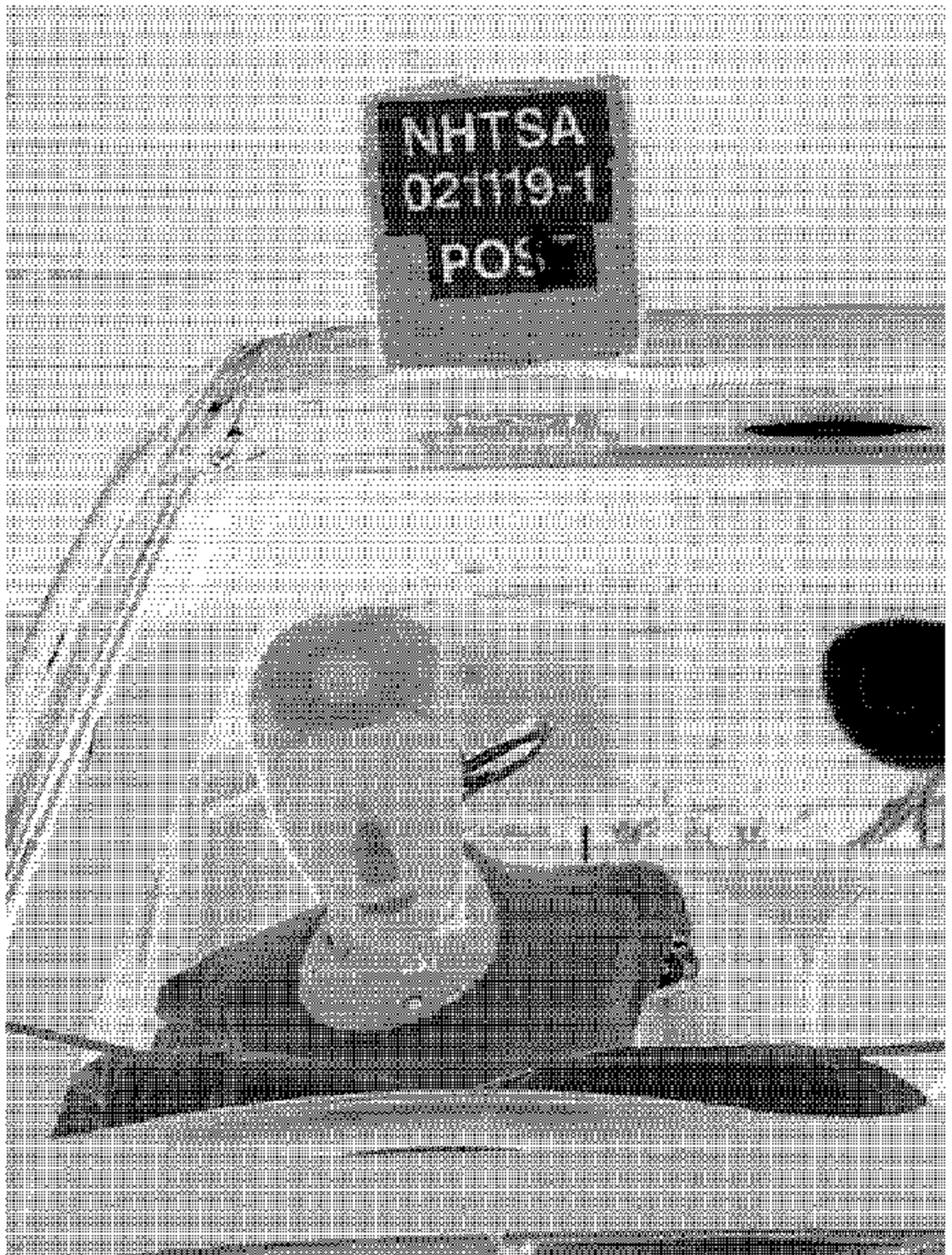


Image 42 Post-Test Passenger Dummy Front View

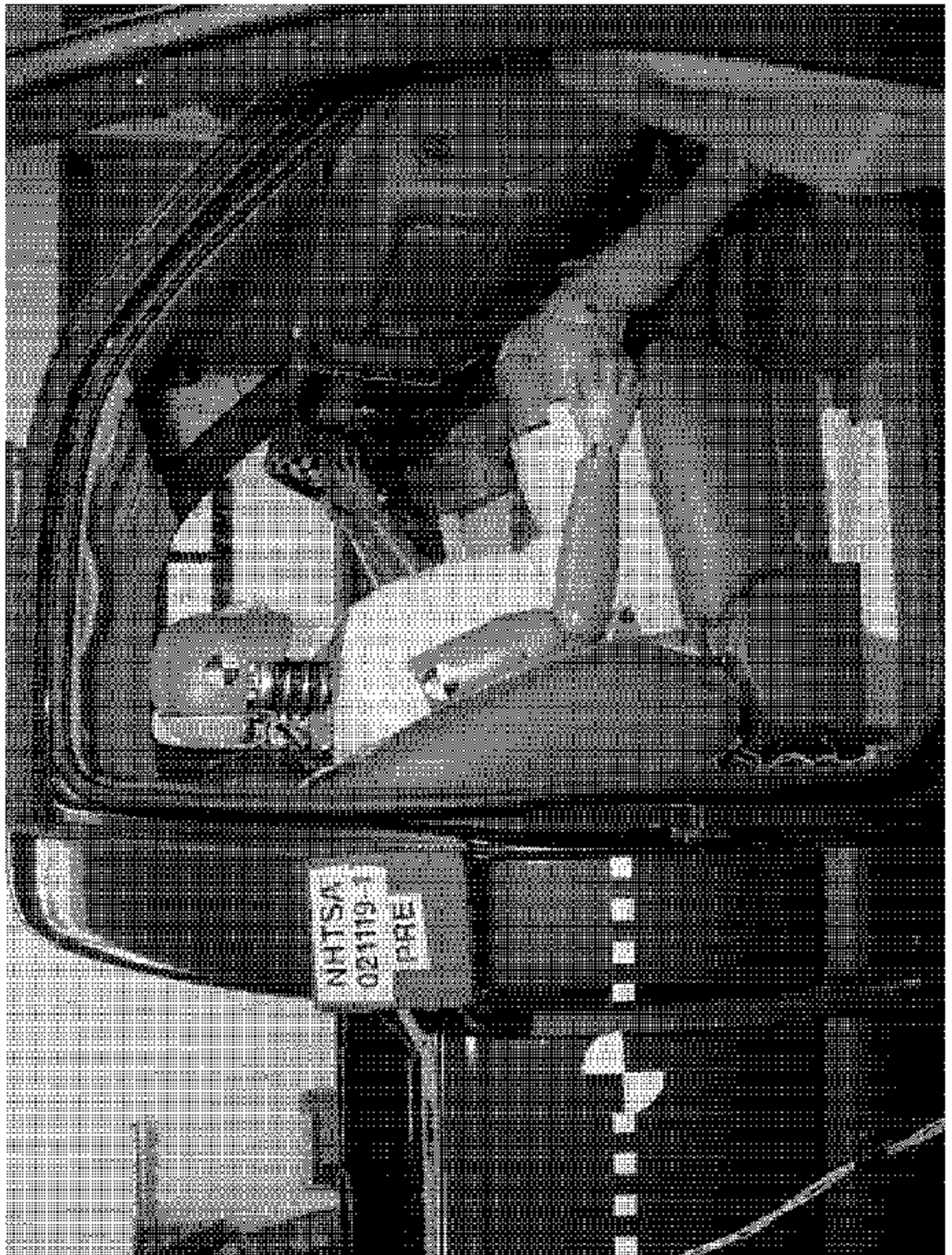


Image 43 Pre-Test Passenger Dummy Position View

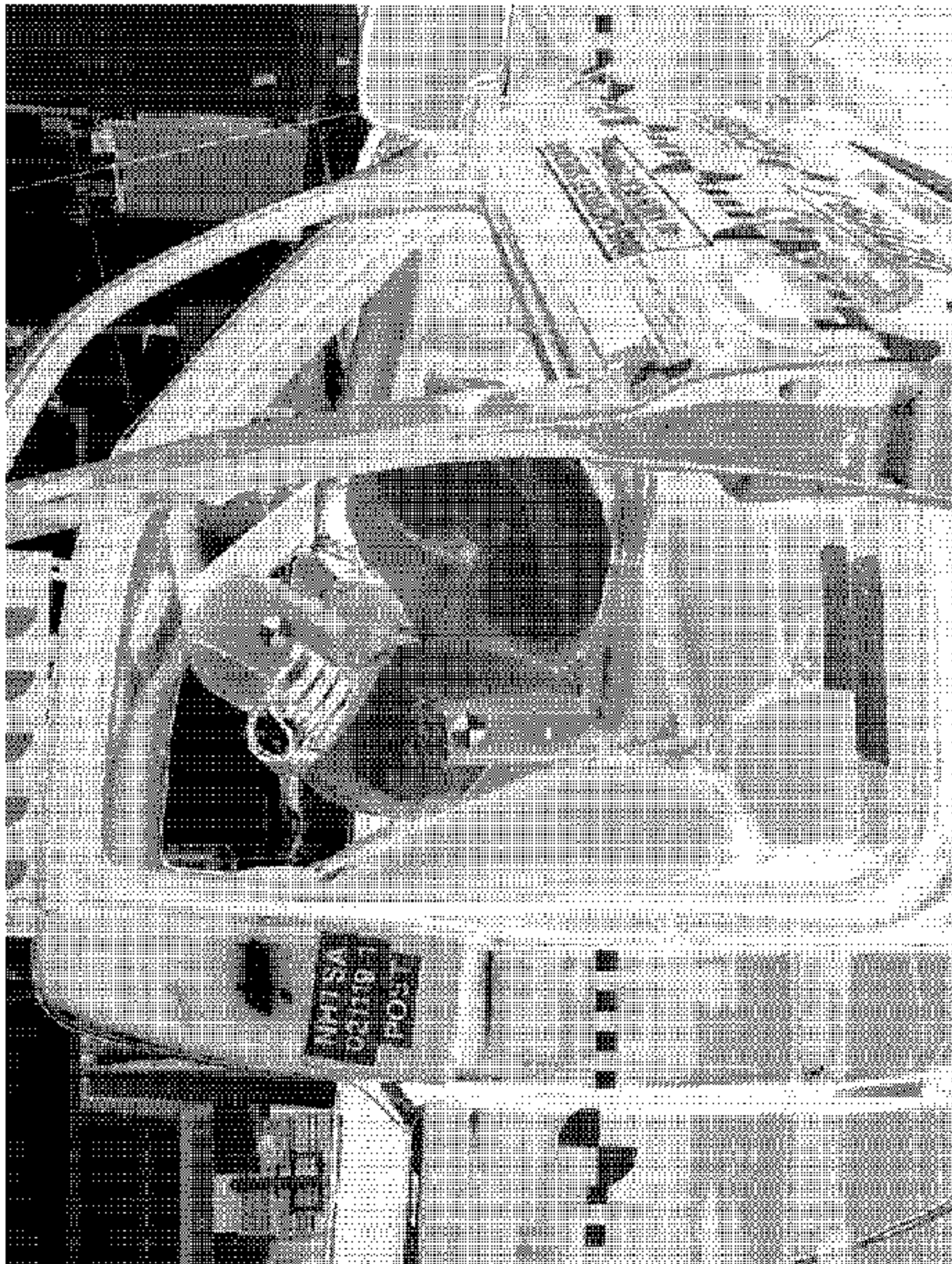


Image 44 Post-Test Passenger Dummy Position View

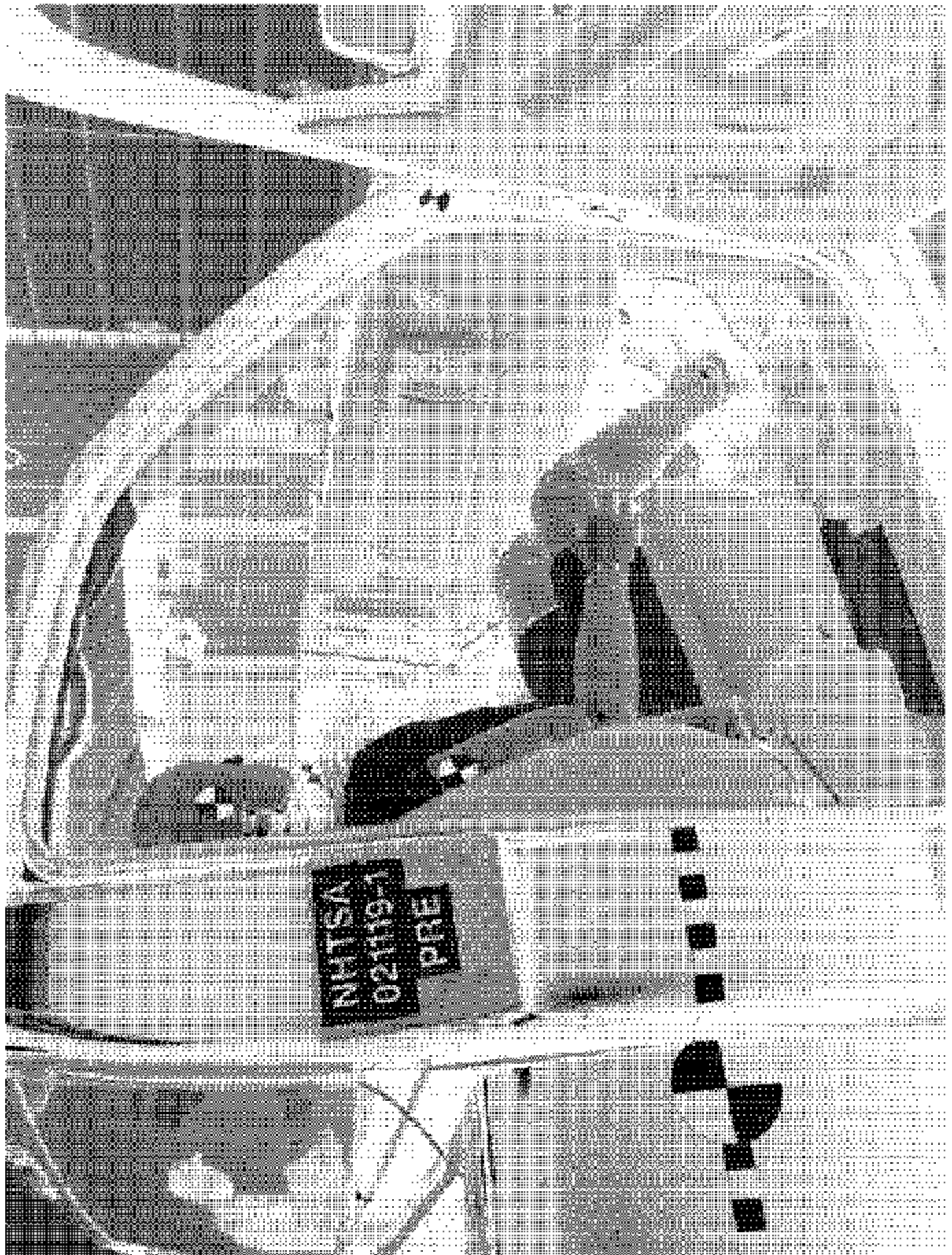


Image 45 Pre-Test Passenger Dummy & Vehicle Intrusion View

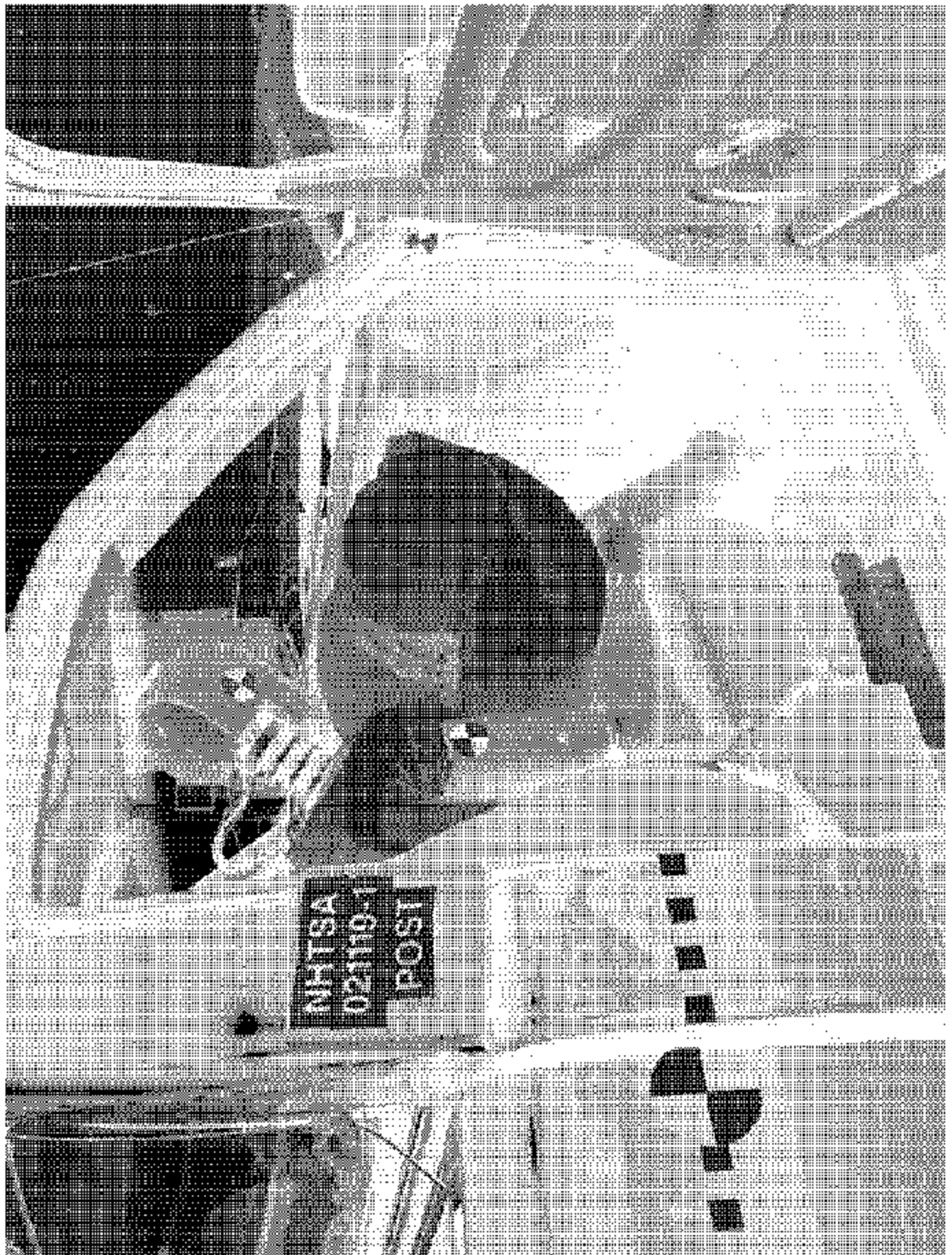


Image 46 Post-Test Passenger Dummy & Vehicle Intrusion View

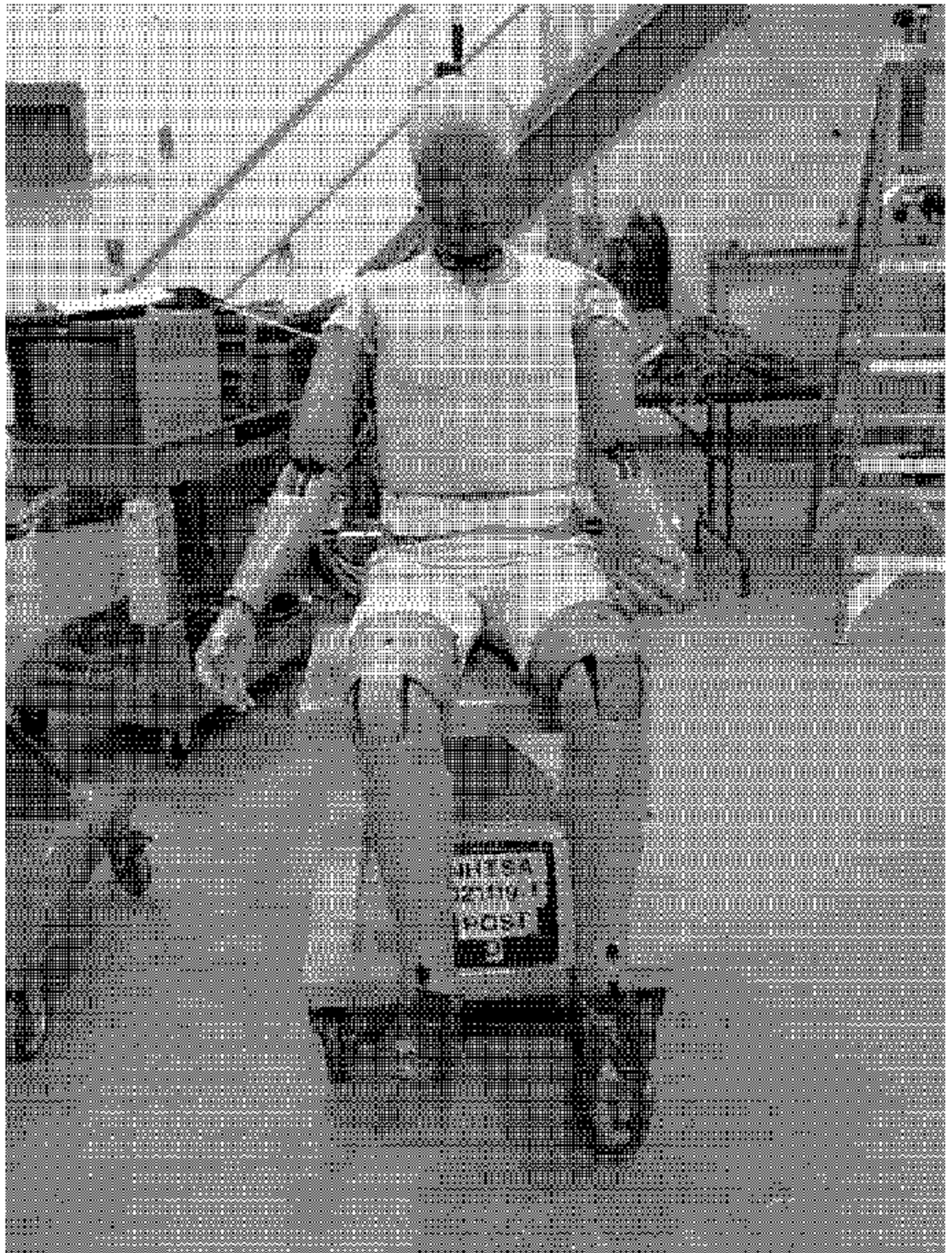


Image 47 Post-Test Driver Dummy View



Image 48 Post-Test Driver Dummy Head Contact - View 1

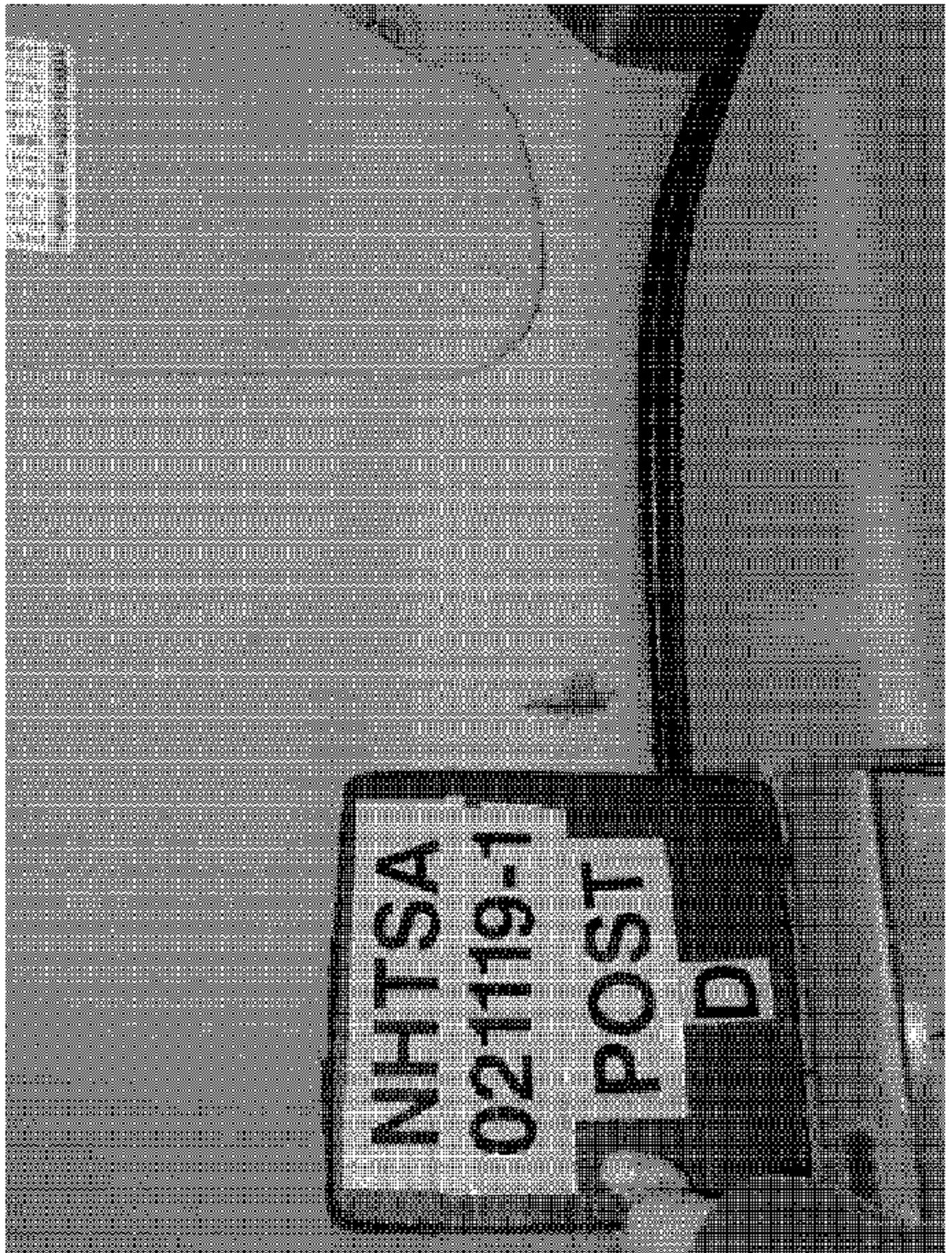


Image 49 Post-Test Driver Dummy Head Contact - View 2

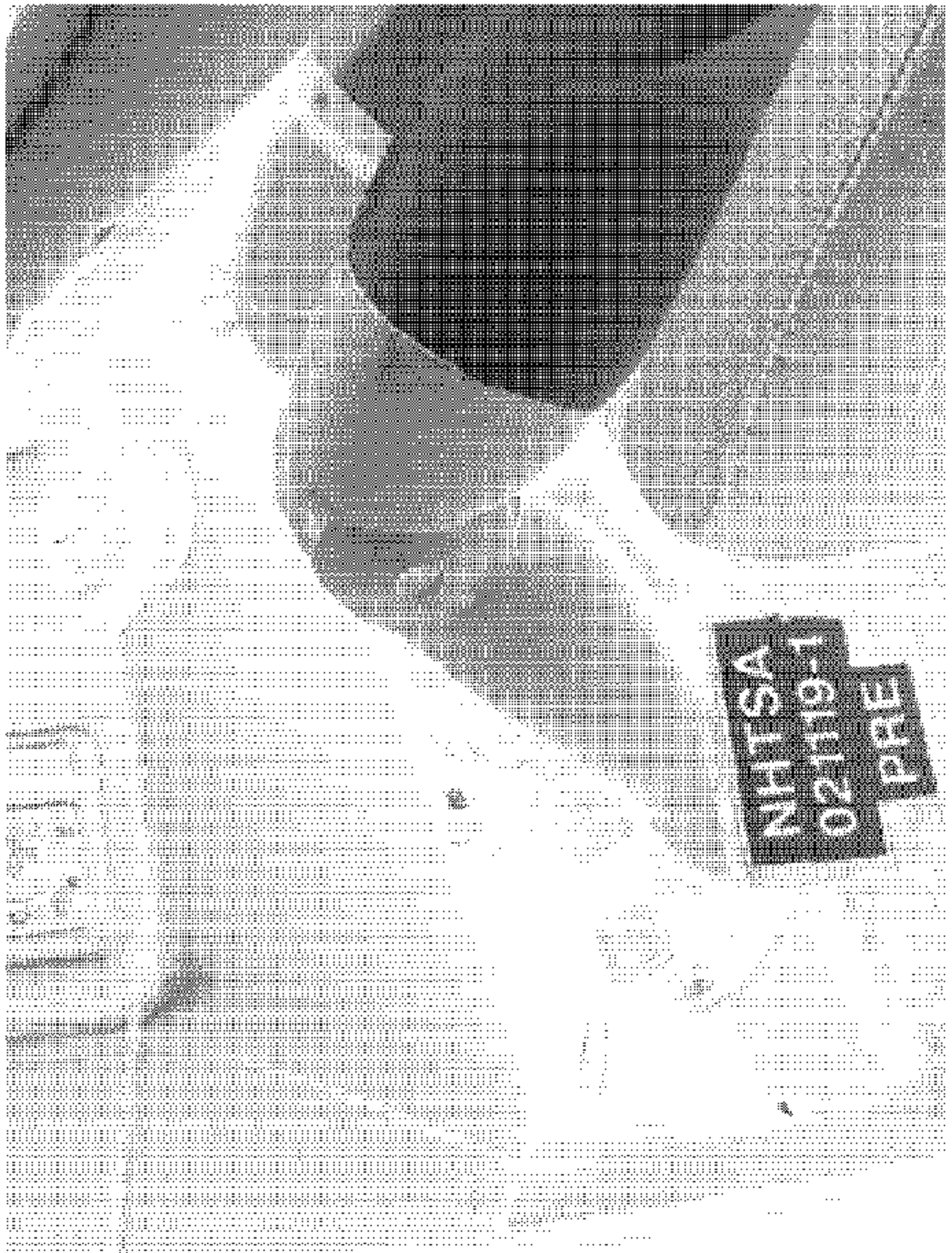


Image 50 Pre-Test Driver Dummy Knee Bolster View

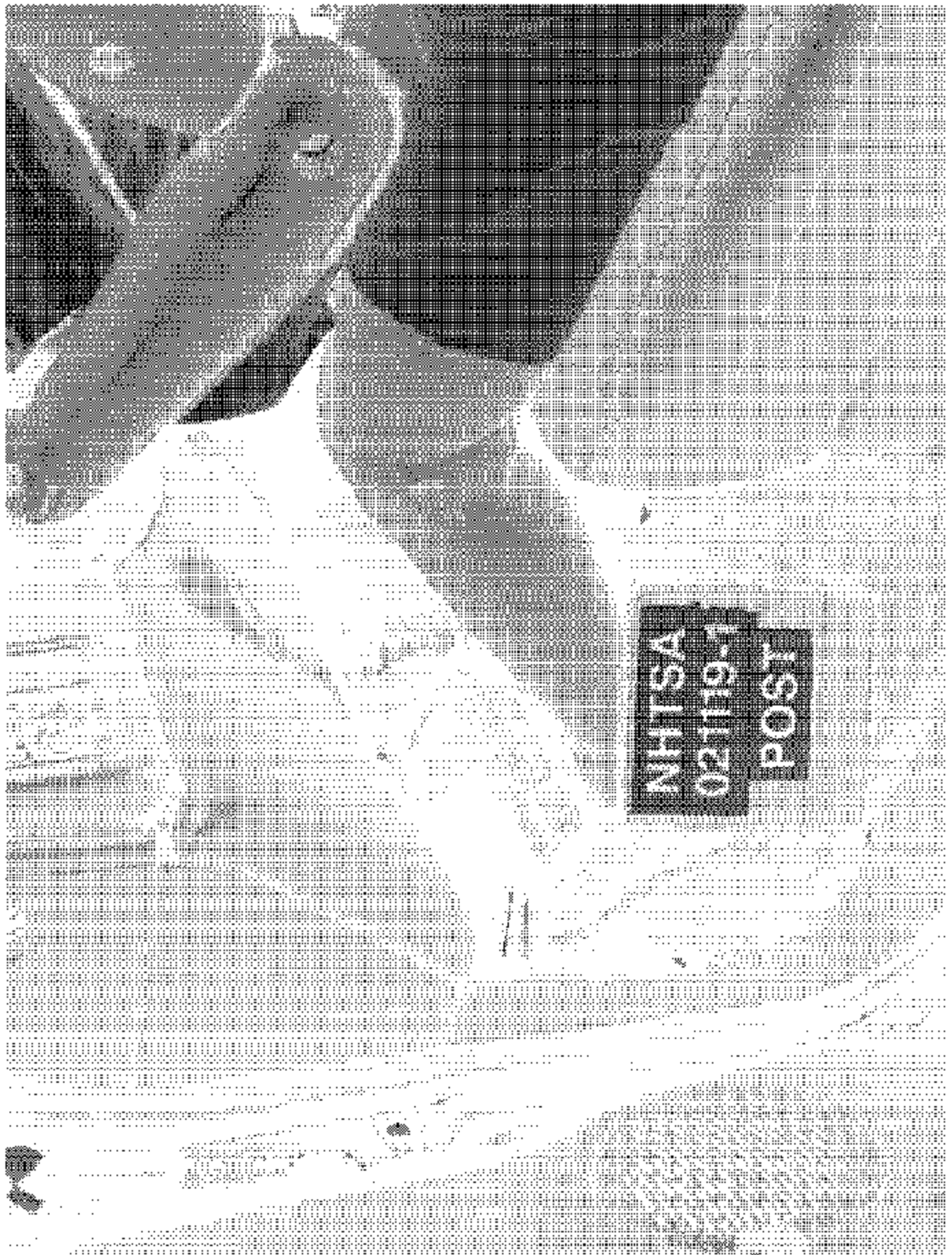


Image 51 Post-Test Driver Dummy Knee Contact - View 1

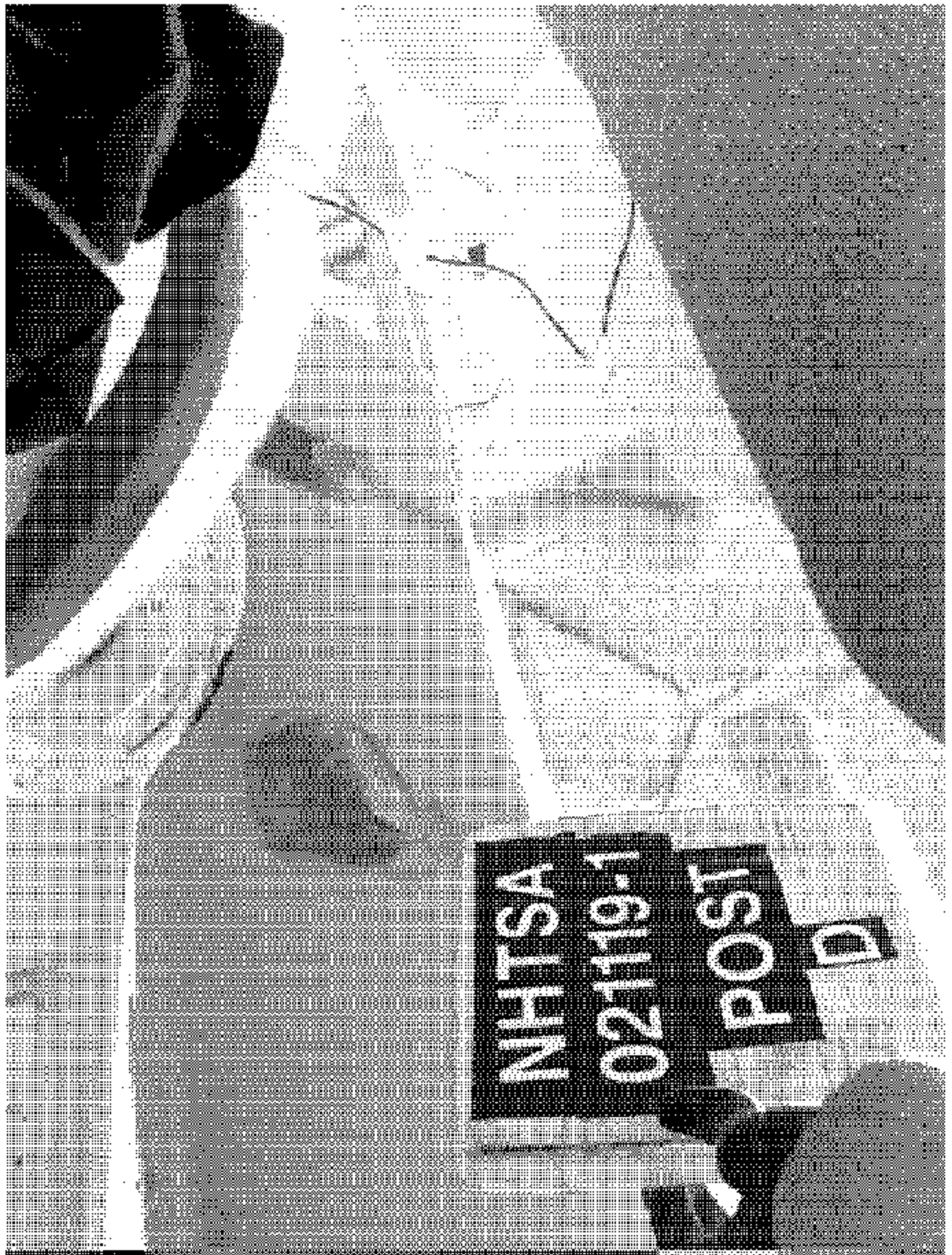


Image 52 Post-Test Driver Dummy Knee Contact - View 2

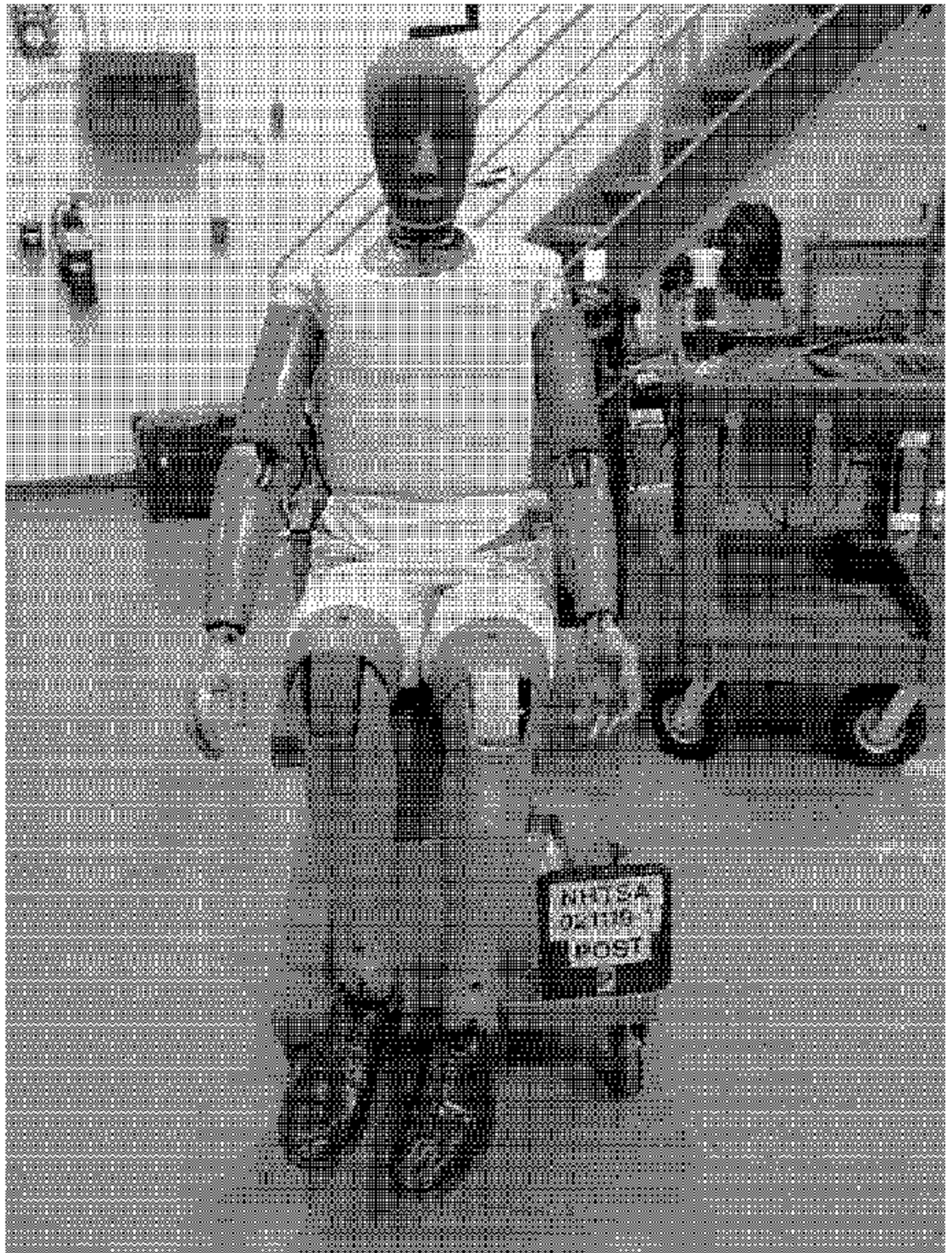


Image 53 Post-Test Passenger Dummy View



Image 54 Post-Test Passenger Dummy Head Contact - View 1



Image 55 Post-Test Passenger Dummy Head Contact - View 2

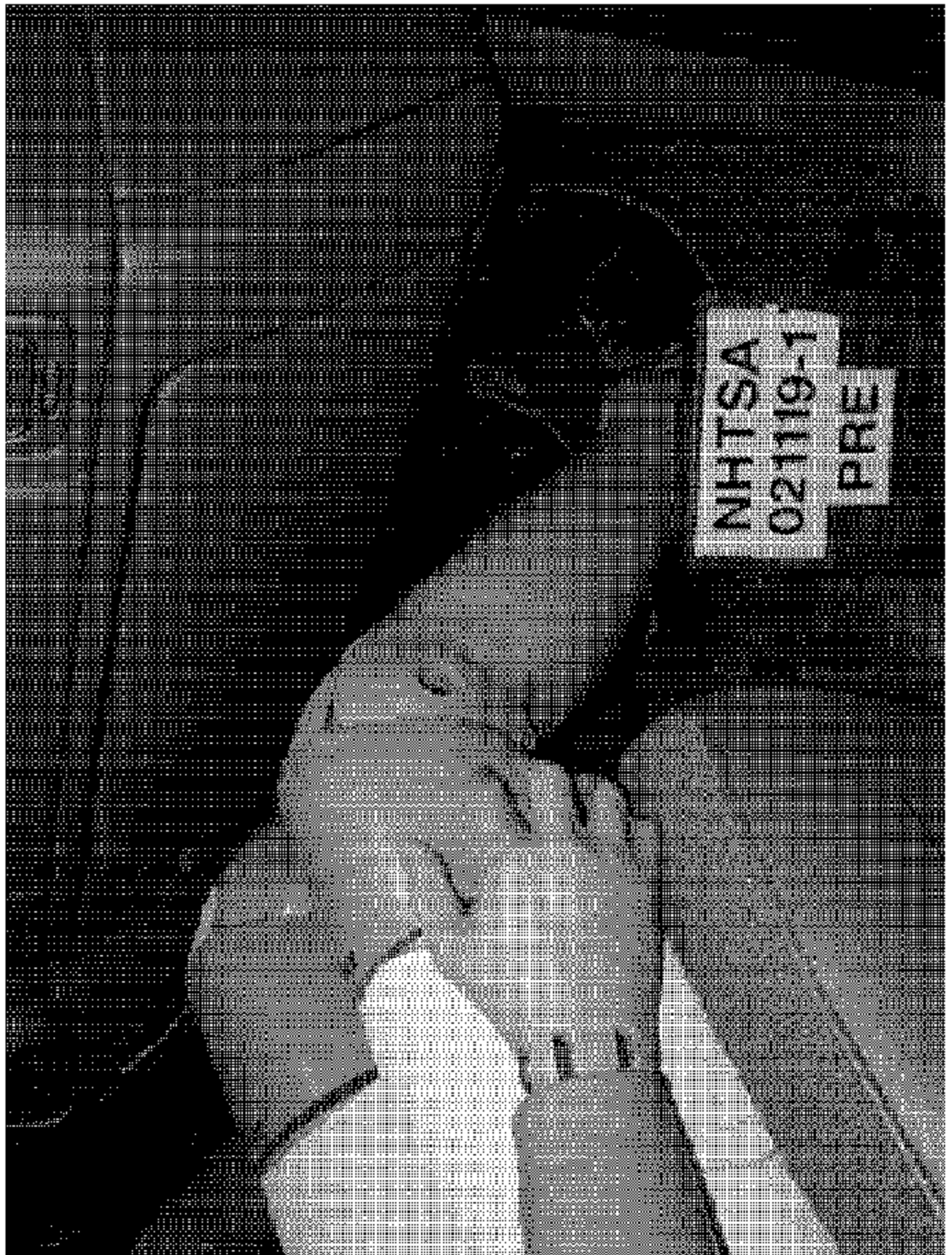


Image 56 Pre-Test Passenger Dummy Knee Bolster View



Image 57 Post-Test Passenger Dummy Knee Contact - View 1



Image 58 Post-Test Passenger Dummy Knee Contact - View 2

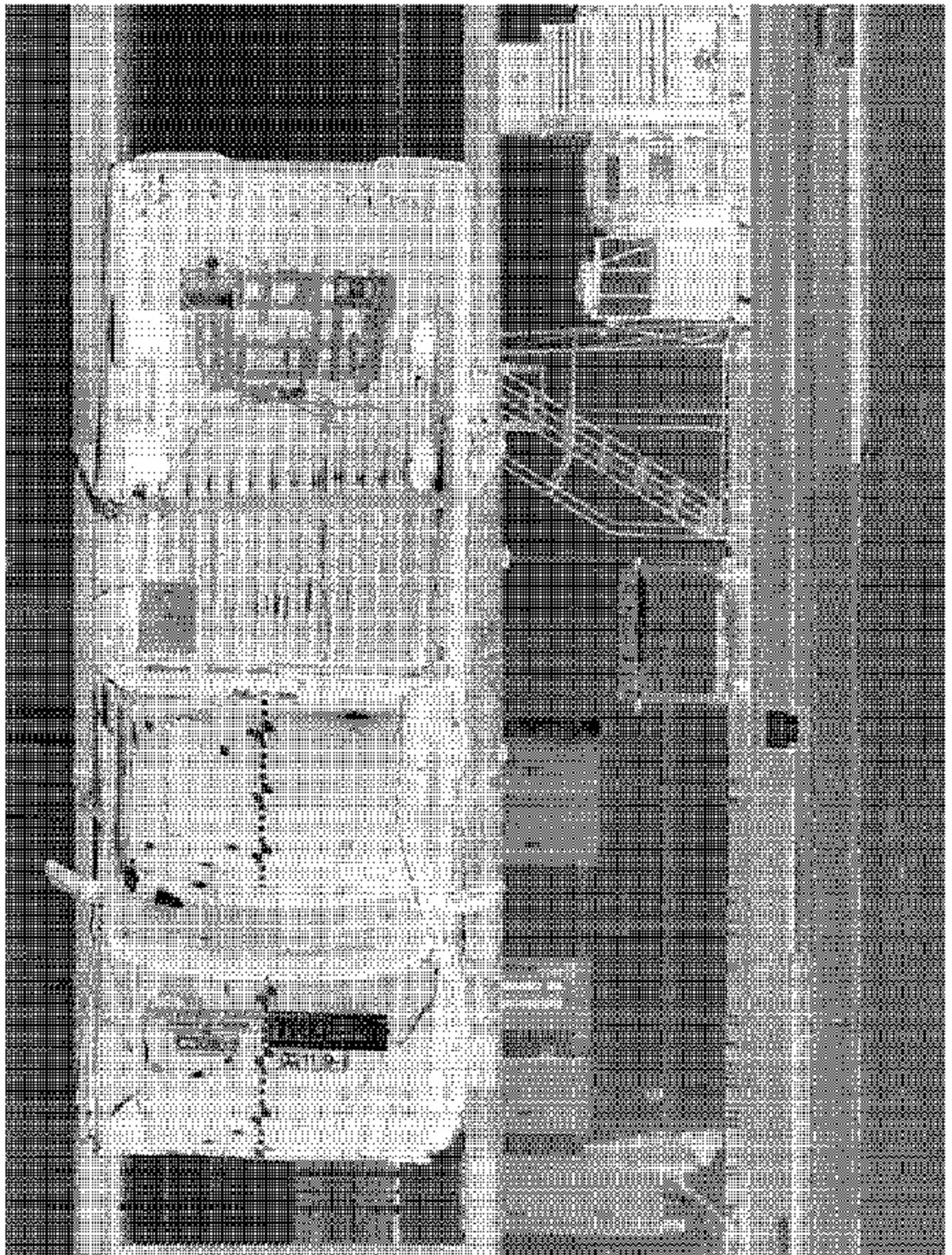


Image 59 Post-Test Vehicle on Static Rollover Device - 90° View



Image 60 Pre-Test Vehicle Ballast View



MFD BY GENERAL MOTORS

GVWR

GVWR (LBS)

2903KG(6400LB)

1429KG(3150LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF
MANUFACTURE SHOWN ABOVE

1GGE014X13Z131545

TYPE: TRUCK

MODEL: C1500

CPLEX TIRE SIZE SPEED RIG

FRT P235/75R16 S

RR P235/75R16 S

SPA P235/75R16 S

RIM

16X6.5J

16X6.5J

16X6.5J

COLD TIRE PRESSURE

240KPA(35PSI)

240KPA(35PSI)

240KPA(35PSI)

SEE OWNER'S MANUAL [1] FOR MORE INFORMATION.

F 336
T 1557

Image 61 Pre-Test Vehicle Certification and Recommended Tire Pressure Label View

Appendix A

Test Equipment List and Calibration Information

Dummy 229a Type HYBRID III SOUTH Description NHLSA - 229a HYBRID III SOUTH CAL DUJE 4-14-03 (DKS 11-18-02)211

| Chsname | Location | Model | Name | Manufacturer | Sens./mV/V/I | Fullscale | Caldate | Pos Output | Hip |
|---------|-------------------------|----------------|----------------|--------------|----------------|-----------|----------|--------------------|-----|
| HEDXG | Head Accel X | 7231C | GB86 | Endevco | 0.01969 g | 750 | 11/14/02 | Rwd | 1 |
| HEDYG | Head Accel Y | 7231C | GB77 | Endevco | 0.01926 g | 750 | 11/14/02 | Lft | 1 |
| HEDZG | Head Accel Z | 7231C | A54F | Endevco | 0.01981 g | 750 | 11/14/02 | Up | 1 |
| NEKXN | Neck Force X | 1716A | 1716A-1222-FX | Denton | 0.00019427 N | 8896.4 | 11/14/02 | 13d Fd, Cst Rt | 1 |
| NEKYF | Neck Force Y | 1716A | 1716A-1222-FY | Denton | 0.000180492 N | 8896.4 | 11/14/02 | 13d Lt, Cst Rt | 0 |
| NKXZF | Neck Force Z | 1716A | 1716A-1222-FZ | Denton | 0.000099943 N | 13344.6 | 11/14/02 | Hd Up, Cst Dn | 0 |
| NEKXM | Neck Moment X | 1716A | 1716A-1222-MX | Denton | 0.005983009 Nm | 282.5 | 11/14/02 | Rt Liar to Rt Shld | 1 |
| NEKYM | Neck Moment Y | 1716A | 1716A-1222-MY | Denton | 0.006140531 Nm | 282.5 | 11/14/02 | Clin to Strum | 0 |
| NEKZM | Neck Moment Z | 1716A | 1716A-1222-MZ | Denton | 0.008429027 Nm | 282.5 | 11/14/02 | Clin to Lt Shld | 0 |
| CSTXG | Chest Accel X | 7231C | C14135 | Endevco | 0.02741 g | 750 | 11/14/02 | Fwd | 0 |
| CSTYG | Chest Accel Y | 7231C | C14317 | Endevco | 0.02739 g | 750 | 11/14/02 | 1.ft | 1 |
| CSTZG | Chest Accel Z | 7231C | C14341 | Endevco | 0.0234 g | 750 | 11/14/02 | Down | 0 |
| CSTXD | Chest Deflection X | 14CB1-2847-229 | 14CB1-2847-229 | Servo | 1.1375 mm | 100 | 11/18/02 | Strut Away 1mm Spn | 0 |
| LFMZP | Left Femur Force Z 603 | 2430T | 2430T-501 | GSE | 0.000071249 N | 13344.7 | 11/14/02 | Knee Fd, Pel Rr | 0 |
| RFMZP | Right Femur Force Z 744 | 2430T | 2430T-502 | GSE | 0.000070313 N | 13344.7 | 11/14/02 | Knee Fd, Pel Rr | 0 |

A-2

021119-1

Dummy 230n Type HYBRID (H 501FL) Description NHTSA - 230n HYBRID IE 50TH, CAL.DUE 13-14-02 (DES 11-18-02)(1211)

| Channel | Location | Model | Name | Manufacturer | Sens,mV/V/Hz | Fullscale | Caldate | Pos Output | Flip |
|---------|------------------------|------------|--------------|--------------|--------------|-----------|----------|--------------------|------|
| HEDXG | Head Accel X | 7231C | AD4H9 | Endevco | 0.01992 | g | 11/14/02 | Rear | 1 |
| HEDYG | Head Accel Y | 7231C | AD4J7 | Endevco | 0.01974 | g | 11/14/02 | Left | 1 |
| HEDZG | Head Accel Z | 7231C | AD4J8 | Endevco | 0.01942 | g | 11/14/02 | Up | 1 |
| NEKXF | Neck Force X | 1716 | 1716-0235-EX | Denton | 0.000191999 | N | 11/14/02 | Hd Fd,Cst Rr | 1 |
| NEKYF | Neck Force Y | 1716 | 1716-0235-FY | Denton | 0.000185468 | N | 11/14/02 | Hd L1,Cst Rl | 0 |
| NEKZF | Neck Force Z | 1716 | 1716-0235-FZ | Denton | 0.000093686 | N | 11/14/02 | Hd Lp,Cst Dn | 0 |
| NEKXM | Neck Moment X | 1716 | 1716-0235-MX | Denton | 0.005842832 | N-m | 11/14/02 | Rl Far to Rl Shld | 1 |
| NEKYM | Neck Moment Y | 1716 | 1716-0235-MY | Denton | 0.003910088 | N-m | 11/14/02 | Clm to Strum | 0 |
| NEKZM | Neck Moment Z | 1716 | 1716-0235-MZ | Denton | 0.008362124 | N-m | 11/14/02 | Clm to Lt Shld | 0 |
| CSTXG | Chest Accel X | 7231C | ACTR4 | Endevco | 0.01976 | g | 11/14/02 | Fwd | 0 |
| CSTYG | Chest Accel Y | 7231C | ACTF4 | Endevco | 0.01922 | g | 11/14/02 | Left | 1 |
| CSTZG | Chest Accel Z | 7231C | ACTW0 | Endevco | 0.01972 | g | 11/14/02 | Down | 0 |
| CSTXD | Chest Deflection X | 14CB1-2847 | 85427-1 | Servo | 1.1347 | mm | 11/18/02 | Strum Away Frm Spn | 0 |
| LFMZF | Left Femur Force Z 60 | 2430T | 2430T-984 | GSB | 0.000071646 | N | 11/14/02 | Knee Fd,Pcl Rr | 0 |
| RFMZF | Right Femur Force Z 28 | 2430T | 2430T-985 | GSB | 0.000070088 | N | 11/14/02 | Knee Fd,Pcl Rr | 0 |

A-3

021119-1

Channel Report

11/19/2002 10:13:30 AM

Name of Test 021119-1 Name of DAU DATE

System MENUDAC

| Chan.# | Sensor # | Mnemonic | Description | Dir. | Range | Pol. | Cal. | Group | Mfg. | Model |
|--------|----------------|----------|------------------------------|--------|-----------|------|------------|-------|---------|------------|
| 0001 | EVENT | SYNCC | SYNCC | | 5.12 | V | 10/15/2002 | OK | IRC | Event |
| 0002 | AD419 | HEDXG1 | Driv. Head Accel X | Rear | 401.60642 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0003 | AD417 | HEDYGL | Driv. Head Accel Y | Left | 399.03359 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0004 | AD418 | HEDZG1 | Driv. Head Accel Z | Up | 399.46322 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0005 | 1716-0235-FX | NEKXF1 | Driv. Neck Force X | Ud | 8888.9351 | N | 11/14/2002 | OK | Denton | 1716 |
| 0006 | 1716-0235-FY | NEKYF1 | Driv. Neck Force Y | Hd | 8905.1097 | N | 11/14/2002 | OK | Denton | 1716 |
| 0007 | 1716-0235-FZ | NEKZF1 | Driv. Neck Force Z | Hd | 13329.424 | N | 11/14/2002 | OK | Denton | 1716 |
| 0008 | 1716-0235-MX | NEKXM1 | Driv. Neck Moment X | Rt Ear | 282.67335 | N-m | 11/14/2002 | OK | Denton | 1716 |
| 0009 | 1716-0235-MY | NEKYM1 | Driv. Neck Moment Y | Chn | 282.18741 | N-m | 11/14/2002 | OK | Denton | 1716 |
| 0010 | 1716-0235-MZ | NEKZM1 | Driv. Neck Moment Z | Chn | 282.15881 | N-m | 11/14/2002 | OK | Denton | 1716 |
| 0011 | ACTR4 | CSTXG1 | Driv. Chest Accel X | Fwd | 398.62971 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0012 | ACTT4 | CSTYGI | Driv. Chest Accel Y | Left | 397.59578 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0013 | ACTW0 | CSTZG1 | Driv. Chest Accel Z | Down | 399.43828 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0014 | 85427-1 | CSTXDI | Driv. Chest Deflection X | Strain | 100.27124 | mm | 11/18/2002 | OK | Servo | 14CB1-2847 |
| 0015 | 2430T-984 | LPMZ1 | Driv. Left Femur Force Z 60 | Knee | 13332.550 | N | 11/14/2002 | OK | GSE | 2430T |
| 0016 | 2430T-985 | RPMZ1 | Driv. Right Femur Force Z 28 | Knee | 13354.848 | N | 11/14/2002 | OK | GSE | 2430T |
| 0017 | GB86 | HEDXG2 | Pass. Head Accel X | Rwd | 400.04688 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0018 | GB77 | HEDYG2 | Pass. Head Accel Y | LB | 402.78171 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0019 | A54F | HEDZG2 | Pass. Head Accel Z | Up | 397.62357 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0020 | 1716A-1222-FX | NEKXF2 | Pass. Neck Force X | Hd | 8903.7408 | N | 11/14/2002 | OK | Denton | 1716A |
| 0021 | 1716A-1222-FY | NEKYF2 | Pass. Neck Force Y | Hd | 8888.0297 | N | 11/14/2002 | OK | Denton | 1716A |
| 0022 | 1716A-1222-FZ | NEKZF2 | Pass. Neck Force Z | Hd | 13340.937 | N | 11/14/2002 | OK | Denton | 1716A |
| 0023 | 1716A-1222-MX | NEKXM2 | Pass. Neck Moment X | Rt Ear | 282.42795 | N-m | 11/14/2002 | OK | Denton | 1716A |
| 0024 | 1716A-1222-MY | NEKYM2 | Pass. Neck Moment Y | Chn | 282.64546 | N-m | 11/14/2002 | OK | Denton | 1716A |
| 0025 | 1716A-1222-MZ | NEKZM2 | Pass. Neck Moment Z | Chn | 282.52316 | N-m | 11/14/2002 | OK | Denton | 1716A |
| 0026 | C14135 | CSTXG2 | Pass. Chest Accel X | Fwd | 397.43221 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0027 | C14317 | CSTYG2 | Pass. Chest Accel Y | LB | 397.72241 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0028 | C14341 | CSTZG2 | Pass. Chest Accel Z | Down | 397.82439 | g | 11/14/2002 | OK | Endevco | 7231C |
| 0029 | 14CB1-2847-229 | CSTXDI | Pass. Chest Deflection X | Strain | 100.02442 | mm | 11/18/2002 | OK | Servo | 14CB1-2847 |
| 0030 | 2430T-901 | LPMZ12 | Pass. Left Femur Force Z 603 | Knee | 13332.218 | N | 11/14/2002 | OK | GSE | 2430T |

Channel Report

11/19/2002 10:13:30 AM

6031 2430T-002 RMZF2 Pass, Right Femur Force Z 744 Knee 13336.494 N 11/14/2002
 0032 341089 LSXXG1 LEFT REAR SEAF RR 1015.7319 g - 6/4/2002

OK 239n GSE 2430T
 OK -1 Endeeco 7264-2000TZ

Channel Report

11/19/2002 10:13:30 AM

Name of Test 021119-1 Name of DAU DAUD

System MINIDAU

| Chan.# | Sensor # | Mnemonic | Description | Dir. | Range | Pol. | Cal. | Group | Mfg. | Model |
|--------|----------|----------|-------------------------|------|-----------|------|------------|-------|---------|----------------|
| 0001 | J41087 | LSXYG1 | LEFT REAR SEAT | L | 1023.2918 | - | 6/6/2002 | OK | Endevco | 7264-2000TZ |
| 0002 | P23985 | RSXXG1 | RIGHT REAR SEAT | FWD | 984.57751 | + | 9/4/2002 | OK | Endevco | 7264C-2K-2-180 |
| 0003 | P23823 | RSXYG1 | RIGHT REAR SEAT | RT | 1004.9264 | + | 9/4/2002 | OK | Endevco | 7264C-2K-2-180 |
| 0004 | J35701 | TENXG1 | TOP OF ENGINE X-AXIS | FWD | 1520.5511 | + | 10/31/2002 | OK | Endevco | 7264-2000TZ |
| 0005 | J36226 | BENXG1 | BOTTOM OF ENGINE X-AXIS | FWD | 1500.3531 | + | 9/10/2002 | OK | Endevco | 7264-2000TZ |
| 0006 | J11642 | RFCXG1 | RIGHT FRONT BRAKE | FWD | 1025.0045 | - | 11/5/2002 | OK | Endevco | 7264-2000T |
| 0007 | 10017 | LFCXG1 | LEFT FRONT BRAKE | RR | 986.51252 | - | 11/5/2002 | OK | Endevco | 7264-2000T |
| 0008 | ACC01 | DPCXG1 | INSTRUMENT PANEL TOP | RR | 1019.3923 | - | 11/5/2002 | OK | Endevco | 7264-2000TZ |
| 0009 | 10084 | RDKZG1 | REAR DECK Z-AXIS | UP | 982.81984 | - | 11/5/2002 | OK | Endevco | 7264-2000TZ |

Shunt Measurement before Test

Name of Test 021119-1

2002 11-19 11:15:11

| DAU | Sensor | Channe | Shunt 1 (+) | | | Shunt 2 (-) | | | Shunt 3 (+) [K3600 only:] | | | Shunt 4 (-) [K3600 only:] | | |
|------|--------------|--------|---------------------|---------------|----------|---------------------|---------------|----------|---------------------------|---------------|----------|---------------------------|---------------|----------|
| | | | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang |
| DAUC | EVENT | 0001 | | | | | | | | | | | | |
| DAUC | AD409 | 0002 | 3.100 | 3.114 | No | | | | | | | | | |
| DAUC | AD407 | 0003 | 3.100 | 3.129 | No | | | | | | | | | |
| DAUC | AD408 | 0004 | 3.100 | 3.120 | No | | | | | | | | | |
| DAUC | 1716-0235-FX | 0005 | 3.700 | 3.707 | No | | | | | | | | | |
| DAUC | 1716-0235-FY | 0006 | 3.700 | 3.704 | No | | | | | | | | | |
| DAUC | 1716-0235-FZ | 0007 | 3.700 | 2.852 | Yes | | | | | | | | | |
| DAUC | 1716-0235-MX | 0008 | 3.700 | 3.720 | No | | | | | | | | | |
| DAUC | 1716-0235-MY | 0009 | 3.700 | 3.716 | No | | | | | | | | | |
| DAUC | 1716-0235-MZ | 0010 | 3.700 | 3.659 | No | | | | | | | | | |
| DAUC | ACTR4 | 0011 | 3.100 | 3.116 | No | | | | | | | | | |
| DAUC | ACTR4 | 0012 | 3.100 | 3.126 | No | | | | | | | | | |
| DAUC | ACTW0 | 0013 | 3.100 | 3.141 | No | | | | | | | | | |
| DAUC | 85427-1 | 0014 | 5.000 | 3.827 | Yes | | | | | | | | | |
| DAUC | 24301-984 | 0015 | 3.700 | 3.722 | No | | | | | | | | | |
| DAUC | 2430T-985 | 0016 | 3.700 | 2.752 | No | | | | | | | | | |
| DAUC | GB86 | 0017 | 3.100 | 3.163 | Yes | | | | | | | | | |
| DAUC | GB77 | 0018 | 3.100 | 3.151 | No | | | | | | | | | |
| DAUC | A54F | 0019 | 3.100 | 3.148 | No | | | | | | | | | |
| DAUC | 1716A-1222-F | 0020 | 3.700 | 3.710 | No | | | | | | | | | |
| | X | | | | | | | | | | | | | |
| DAUC | 1716A-1222-F | 0021 | 3.700 | 3.712 | No | | | | | | | | | |
| | Y | | | | | | | | | | | | | |
| DAUC | 1716A-1222-F | 0022 | 3.700 | 3.654 | No | | | | | | | | | |
| | Z | | | | | | | | | | | | | |
| DAUC | 1716A-1222-M | 0023 | 3.700 | 3.710 | No | | | | | | | | | |
| | X | | | | | | | | | | | | | |
| DAUC | 1716A-1222-M | 0024 | 3.700 | 3.713 | No | | | | | | | | | |
| | Y | | | | | | | | | | | | | |

| DAU | Sensor | Channel | Shunt 1 (+) | | | Shunt 2 (-) | | | Shunt 3 (+) [K3600 only] | | | Shunt 4 (-) [K3600 only] | | |
|------|----------------|---------|---------------------|---------------|----------|---------------------|---------------|----------|--------------------------|---------------|----------|--------------------------|---------------|----------|
| | | | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang |
| DAUC | 1716A-1222-MZ | 0025 | 3.700 | 3.663 | No | | | | | | | | | |
| DAUC | C14135 | 0026 | 3.100 | 3.134 | No | | | | | | | | | |
| DAUC | C14317 | 0027 | 3.100 | 3.134 | No | | | | | | | | | |
| DAUC | C14341 | 0028 | 3.100 | 3.138 | No | | | | | | | | | |
| DAUC | 14CB1-2847-229 | 0029 | 5.000 | 3.207 | Yes | | | | | | | | | |
| DAUC | 2430T-901 | 0030 | 3.700 | 3.698 | No | | | | | | | | | |
| DAUC | 2430T-902 | 0031 | 3.700 | 3.693 | No | | | | | | | | | |
| DAUC | J41089 | 0032 | 3.000 | 2.847 | Yes | | | | | | | | | |
| DAUD | J41087 | 0001 | 3.000 | 2.700 | Yes | | | | | | | | | |
| DAUD | P23985 | 0002 | 3.000 | 3.157 | Yes | | | | | | | | | |
| DAUD | P23823 | 0003 | 3.000 | 3.159 | Yes | | | | | | | | | |
| DAUD | J35701 | 0004 | 3.000 | 2.785 | Yes | | | | | | | | | |
| DAUD | J36236 | 0005 | 3.000 | 3.234 | Yes | | | | | | | | | |
| DAUD | J11642 | 0006 | 3.000 | 2.803 | Yes | | | | | | | | | |
| DAUD | 10017 | 0007 | 3.000 | 2.797 | Yes | | | | | | | | | |
| DAUD | ACC01 | 0008 | 3.000 | 2.607 | Yes | | | | | | | | | |
| DAUD | 10084 | 0009 | 3.000 | 2.684 | Yes | | | | | | | | | |

Shunt Measurement after Test

Name of Test 021119-1

2003-11-19 11:28:16

| DAU | Sensor | Channel | Shunt 1 (+) | | | Shunt 2 (-) | | | Shunt 3 (+) {K3600 only!} | | | Shunt 4 (-) {K3600 only!} | | |
|------|--------------|---------|---------------------|---------------|----------|---------------------|---------------|----------|---------------------------|---------------|----------|---------------------------|---------------|----------|
| | | | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang |
| DAUC | EVENT | 0001 | | | | | | | | | | | | |
| DAUC | AD41U9 | 0002 | 3.100 | 3.114 | No | | | | | | | | | |
| DAUC | AD41J7 | 0003 | 3.100 | 3.129 | No | | | | | | | | | |
| DAUC | AD41R | 0004 | 3.100 | 3.119 | No | | | | | | | | | |
| DAUC | 1716-0235-FX | 0005 | 3.700 | 3.707 | No | | | | | | | | | |
| DAUC | 1716 0235 FY | 0006 | 3.700 | 3.703 | No | | | | | | | | | |
| DAUC | 1716-0235-FZ | 0007 | 3.700 | 3.832 | Yes | | | | | | | | | |
| DAUC | 1716-0235-MX | 0008 | 3.700 | 3.720 | No | | | | | | | | | |
| DAUC | 1716-0235-MY | 0009 | 3.700 | 3.716 | No | | | | | | | | | |
| DAUC | 1716-0235-MZ | 0010 | 3.700 | 3.659 | No | | | | | | | | | |
| DAUC | ACTR4 | 0011 | 3.100 | 3.126 | No | | | | | | | | | |
| DAUC | ACT14 | 0012 | 3.100 | 3.126 | No | | | | | | | | | |
| DAUC | ACTW0 | 0013 | 3.100 | 3.140 | No | | | | | | | | | |
| DAUC | 85427-1 | 0014 | 5.000 | 3.869 | Yes | | | | | | | | | |
| DAUC | 2430T-984 | 0015 | 3.700 | 3.724 | No | | | | | | | | | |
| DAUC | 2430T-985 | 0016 | 3.700 | 3.732 | No | | | | | | | | | |
| DAUC | GB86 | 0017 | 3.100 | 3.162 | Yes | | | | | | | | | |
| DAUC | CTB77 | 0018 | 3.100 | 3.150 | No | | | | | | | | | |
| DAUC | A54F | 0019 | 3.100 | 3.148 | No | | | | | | | | | |
| DAUC | 1716A-1222-F | 0020 | 3.700 | 3.710 | No | | | | | | | | | |
| | X | | | | | | | | | | | | | |
| DAUC | 1716A-1222-F | 0021 | 3.700 | 3.712 | No | | | | | | | | | |
| | Y | | | | | | | | | | | | | |
| DAUC | 1716A-1222-F | 0022 | 3.700 | 3.654 | No | | | | | | | | | |
| | Z | | | | | | | | | | | | | |
| DAUC | 1716A-1222-M | 0023 | 3.700 | 3.709 | No | | | | | | | | | |
| | X | | | | | | | | | | | | | |
| DAUC | 1716A-1222-M | 0024 | 3.700 | 3.714 | No | | | | | | | | | |
| | Y | | | | | | | | | | | | | |

| DAU | Sensor | Channel | Shunt 1 (+) | | | | Shunt 2 (-) | | | | Shunt 3 (1) [K36]0 only] | | | | Shunt 4 (-) [K3600 only] | | | |
|------|----------------|---------|---------------------|---------------|----------|---------------------|---------------|----------|---------------------|---------------|--------------------------|---------------|----------|---------------------|--------------------------|----------|---------------------|---------------|
| | | | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / | Out Rang | Reference Voltage / | Shunt Value / |
| DAUC | 1716A-1222-MZ | 0025 | 3.700 | 3.663 | No | | | | | | | | | | | | | |
| DAUC | C14135 | 0026 | 3.100 | 3.134 | No | | | | | | | | | | | | | |
| DAUC | C14317 | 0027 | 3.100 | 3.134 | No | | | | | | | | | | | | | |
| DAUC | C14341 | 0028 | 3.100 | 3.137 | No | | | | | | | | | | | | | |
| DAUC | 14081-2847-229 | 0029 | 5.000 | 3.215 | Yes | | | | | | | | | | | | | |
| DAUC | 2430T-901 | 0030 | 3.700 | 3.698 | No | | | | | | | | | | | | | |
| DAUC | 2430T-902 | 0031 | 3.700 | 3.693 | No | | | | | | | | | | | | | |
| DAUC | J41089 | 0032 | 3.000 | 2.845 | Yes | | | | | | | | | | | | | |
| DAUD | J41087 | 0001 | 3.000 | 2.697 | Yes | | | | | | | | | | | | | |
| DAUD | P23985 | 0002 | 3.000 | 3.157 | Yes | | | | | | | | | | | | | |
| DAUD | P23823 | 0003 | 3.000 | 3.159 | Yes | | | | | | | | | | | | | |
| DAUD | J35701 | 0004 | 3.000 | 99.990 | Yes | | | | | | | | | | | | | |
| DAUD | J36226 | 0005 | 3.000 | 3.237 | Yes | | | | | | | | | | | | | |
| DAUD | J11642 | 0006 | 3.000 | 2.794 | Yes | | | | | | | | | | | | | |
| DAUD | 10017 | 0007 | 3.000 | 2.787 | Yes | | | | | | | | | | | | | |
| DAUD | ACC01 | 0008 | 3.000 | 2.603 | Yes | | | | | | | | | | | | | |
| DAUD | 10084 | 0009 | 3.000 | 2.662 | Yes | | | | | | | | | | | | | |